# ENGINEERING NEWS-RECORD

Water jets push Lincoln Tunnel completion *p. 30*

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*An engineering fact...*

# WROUGHT IRON PIPE takes up to a 50% heavier coating of

Tests prove the iron silicate fibers which give wrought iron its unusually high resistance to corrosion are also responsible for the material's ability to accept a considerably thicker hot-dip zinc protective coating than steel.

Our bulletin, *Piping for Permanence*, discusses galvanic protection, and reviews a variety of wrought iron pipe services. Write for your copy.

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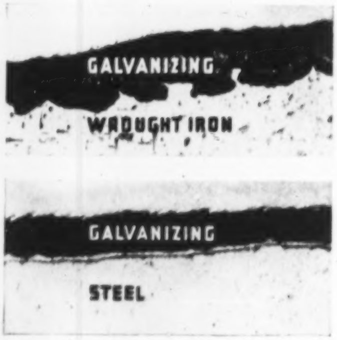
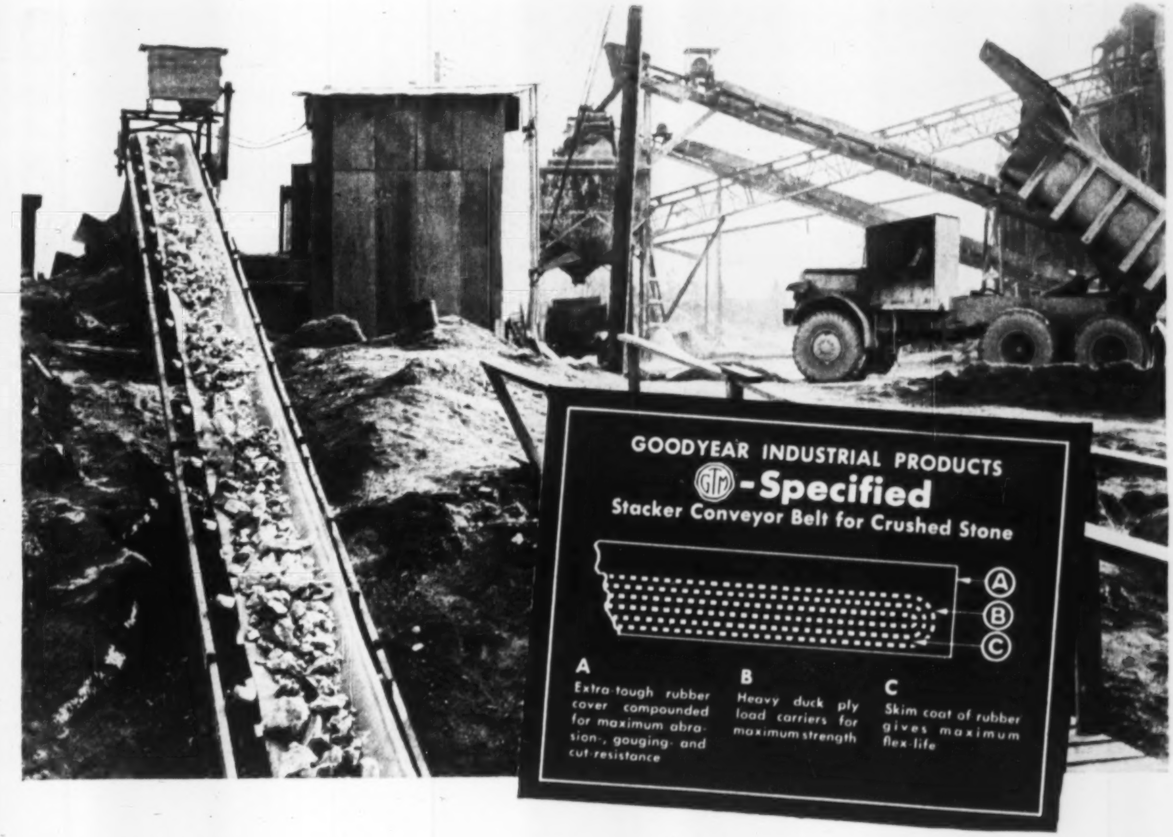


These photomicrographs illustrate the ability of wrought iron to receive a tighter, heavier zinc coating. Because the life of the coating is directly influenced by its adherence and weight or thickness, zinc coating on wrought iron lasts longer.

**BYERS** *Wrought Iron Tubular and Hot Rolled Products*

ALSO ELECTRIC FURNACE QUALITY STEEL PRODUCTS

# They rolled up a 37% saving on this tough quarry job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C
Skim coat of rubber gives maximum flex-life

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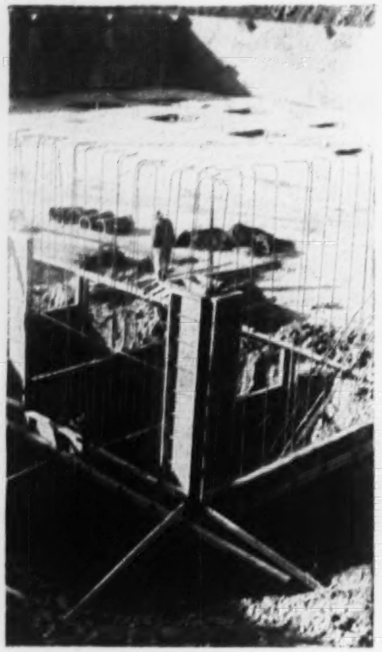
*Symons* FIELD REPORT...



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7,500 square feet of Symons Standard Forms were used in the new 2 million gallon capacity pumping station at Melrose Park, Illinois. 2,000 cubic yards of concrete were used on the job and the concrete contractor, Louis Macro Company, Melrose Park, reported a 40 per cent saving through the use of Symons Forms. Walls for the job were completed in three pours.

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EIGHTY-SECOND YEAR OF PUBLICATION

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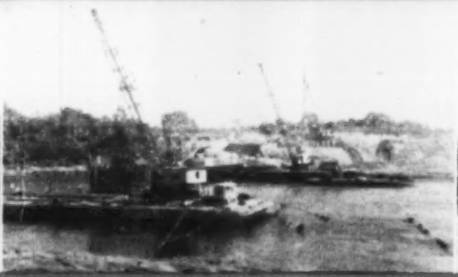
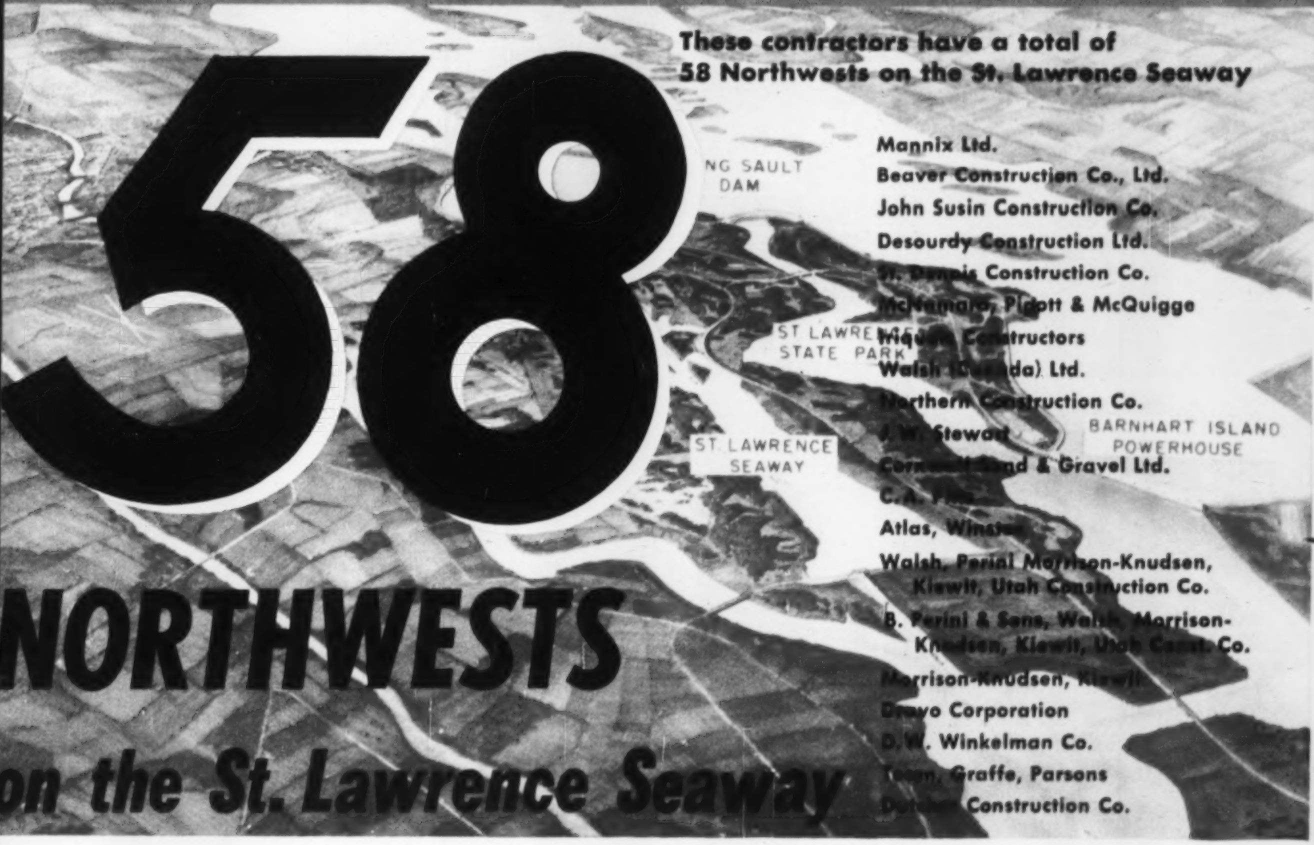


Two Northwests on the Grass River Bridge, D.W. Winkelman contract.

Northwest Pullshovel ownd by Iriquois Construction Co. on a lock job.



# 58 NORTHWESTS on the St. Lawrence Seaway

**These contractors have a total of 58 Northwests on the St. Lawrence Seaway**

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John Susin Construction Co.
Desourdy Construction Ltd.
St. Dennis Construction Co.
McNamara, Pigott & McQuigge
Iriquois Constructors
Walsh (Canada) Ltd.
Northern Construction Co.
J. W. Stewart
Cornwall Sand & Gravel Ltd.
C. A. Pitts
Atlas, Winston
Walsh, Perini Morrison-Knudsen, Kiewit, Utah Construction Co.
B. Perini & Sons, Walsh, Morrison-Knudsen, Kiewit, Utah Const. Co.
Morrison-Knudsen, Kiewit
Dravo Corporation
D.W. Winkelman Co.
Tecon, Graffe, Parsons
Dutcher Construction Co.

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Remember the Turnpikes — the New York Thruway (more Northwests than any other make) — the West Virginia Turnpike (over half the shovel and crane equipment Northwests) — the Ohio Turnpike, the Kansas Turnpike, the Maine Turnpike Extension, the Massachusetts Turnpike, the Connecticut Turnpike, all dominated by Northwest equipment.

Here is another world famous job — a job involving everything from rock to simple material handling — another job predominantly Northwest equipped — over 58 Northwests handling all types of work from Shovel and Pullshovel excavation to Dragline and Crane jobs.

If you are planning on Shovel or Crane equipment, the outstanding leadership of Northwest on both big jobs and small is worth thinking about. There *is* a reason — Northwest Advantages make money. Plan now to have Northwest equipment. Let a Northwest Man give you complete details.

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# NORTHWEST

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## CARBIDE INSERT? or MULTI-USE?

**LOCATION:** Spaulding Turnpike project, Route 16, Dover, N. H.
**OPERATION CONDITIONS:** Medium granite.

# W. H. HINMAN, INC., speeds drilling, reduces bit changes on Spaulding Turnpike with TIMKEN® DC and KC carbide insert bits

DRILLING through medium granite on New Hampshire's Spaulding Turnpike project, W. H. Hinman, Inc., increased drilling speed and reduced bit changes by using Timken® DC and KC carbide insert bits.

Timken carbide insert bits give you the highest speed through hard, abrasive ground. They're most economical for constant-gauge holes, small-diameter holes, and extremely deep holes.

But Timken carbide insert bits may not provide the best solution to *all* your drilling problems. For instance, in drilling ordinary ground, Timken multi-use bits are most economical. With correct and controlled reconditioning, they give the lowest cost per foot of hole when full increments of steel can be drilled.

Both Timken multi-use and carbide insert bits are made from electric furnace, Timken fine alloy steel. So you can count on them to last longer. And, because of the shoulder union developed by the Timken Company, threads are not subjected to drilling impact.

Many different Timken carbide insert and multi-use bits are interchangeable in the same thread series. Drillers can change bit types quickly and easily as the ground changes—right on the job!

To find out which Timken bit type is best for *your* needs, call or write the Timken Rock Bit Engineering Service, The Timken Roller Bearing Company, Canton 6, Ohio. Cable address: "TIMROSCO".

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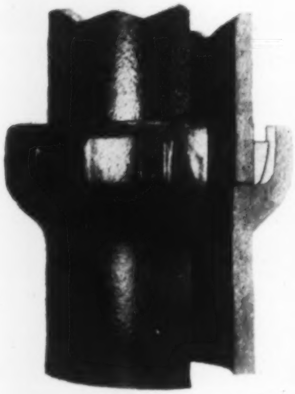
# Infiltration-proof AMVIT* JOINTED CLAY PIPE gives you *lowest cost of sewer line in place*



## Longer, stronger pipe with plastic mechanical joint speeds installation, saves labor

Amvit Jointed Clay pipe produces professional results with minimum effort. The joint is on the pipe, delivered to the job ready to use. No other materials such as caulking, joint compound, hot-pots, or ladles are needed to make the Amvit Joint. It takes just a few seconds to push the pipe together and the line is complete.

Field tests on the more than 60 installations completed show that Amvit prevents ground water infiltration. This results in sizable savings in both pumping and treatment plant costs. Amvit is a compression type joint on the ball and socket principle. Nothing can enter the line after it is complete.

Amvit Jointed Clay pipe, in sizes 4" through 24", together with all fittings is available for immediate delivery in the Northeast and Central States.

For more information, write or call American Vitrified Products Company, National City Bank Building, Cleveland, Ohio, or our office nearest you.

*The Amvit Joint is made of a plastic material with rubber-like characteristics. Like the pipe, the joint will withstand the most severe underground conditions. Amvit Joint is furnished on all fittings.*

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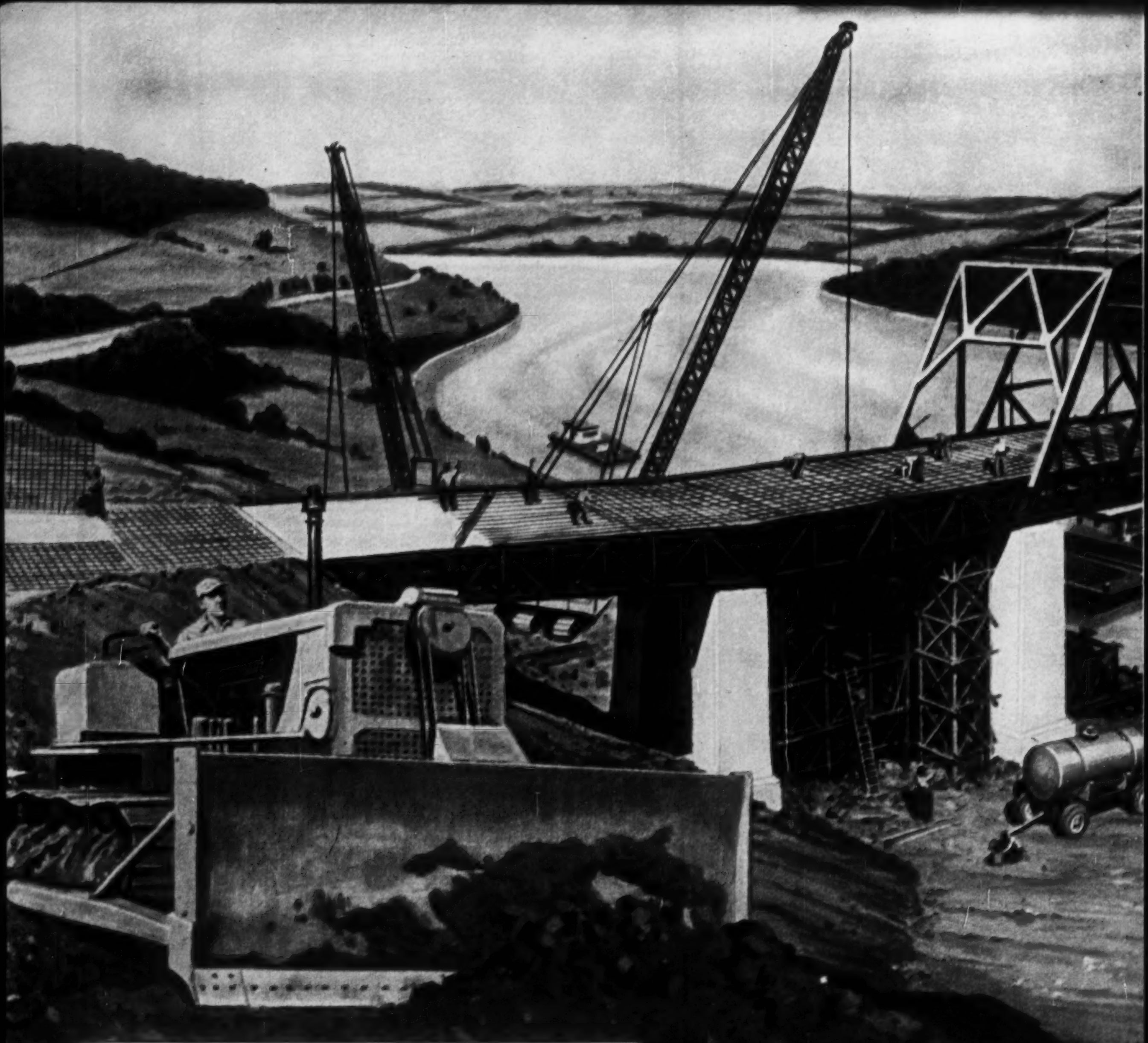

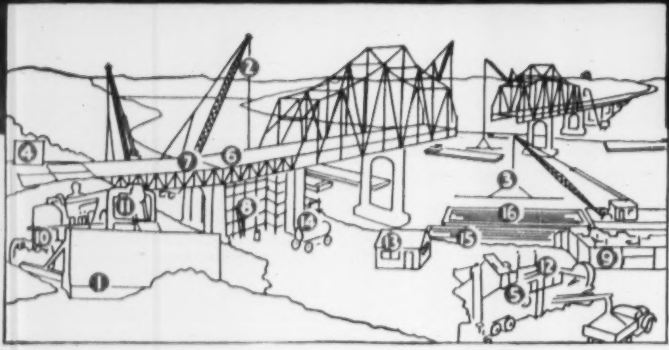

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⑫ Claymont Fabricated Steel Parts
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Today's builders are specialists who know how to get a difficult job done . . . and done economically.

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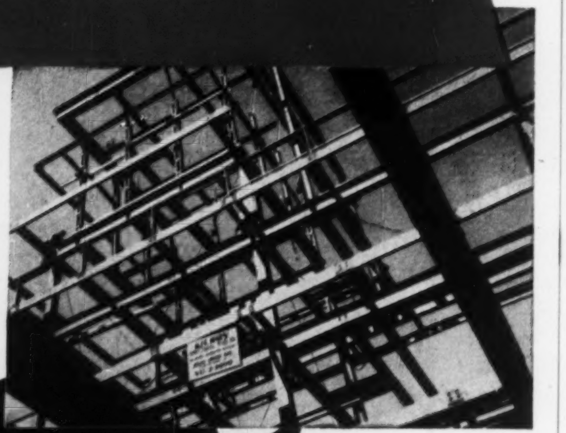
Saving Money All The Way



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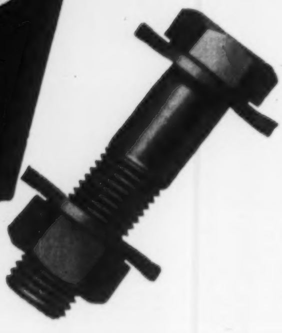

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So, on all counts, you're way ahead with High-Strength Bolting construction. Send for your free brochure giving the whole detailed story—including sizes and load strengths.

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## Pozzolans in Pavements

SIR—Your recent thought-provoking editorial on the use of pozzolans in pavement concrete (ENR Aug. 2, p. 96) suggests that many of the good qualities of pozzolanic mixes have not been established by experience. We are forced to agree with you despite the fact that concrete pavements containing fly ash were constructed as early as the 1930's in the Chicago area and in the late 40's in several other states. We submit that the only way people are going to get the experience you mention and that everyone requires is to start at this time trying out pozzolans in concrete pavements on a small scale at first with the idea that scale will grow as experience dictates.

As you may know, the Chicago Fly Ash Company is one of those organizations trying to develop interest in the use of pozzolans, specifically fly ash, in pavement concrete. We feel it is worthwhile emphasizing to your readers that results found with the use of certain natural pozzolans may not apply with one or all of the available fly ashes.

Because of its spherical particle shape fly ash has unique properties not common to natural pozzolans. This particle shape plus the particle fineness available in commercial fly ash results in a lower water requirement in the concrete with the attendant benefits that accompany that lower water requirement.

We feel that the variability of fly ashes has been over emphasized. It is true that fly ashes from source to source vary over a wide range. However, the other ingredients in portland cement concrete, namely, sand, gravel and cement, also vary over a wide range when coming from different pits, quarries or mills. In many cases the variation of a fly ash coming from one large steam generating plant is of less significance than variations in portland cement coming from one mill. Large steam generating plants have rather substantial outputs. And

Engineering News-Record welcomes expression of opinion from its readers. Comment should be as brief as possible and pertinent to subjects of current construction importance.

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it is reasonable to assume that one such plant would service a particular construction job or project with the same fly ash throughout.

The theory of a pozzolan tying down the calcium hydroxide released in the hydration of portland cement leads to the conclusion that pozzolanic concrete will be more durable to some of the forces that attack concrete pavements. We have felt for some time that adequate air entrainment in the concrete was essential to get good durability against attack from freezing and thawing. We feel that with adequate air entraining fly ash concrete will be at least as durable to this attack as normal portland cement concrete mixes.

Craig J. Cain
*President*
*Chicago Fly Ash Co.*
*Chicago, Ill.*

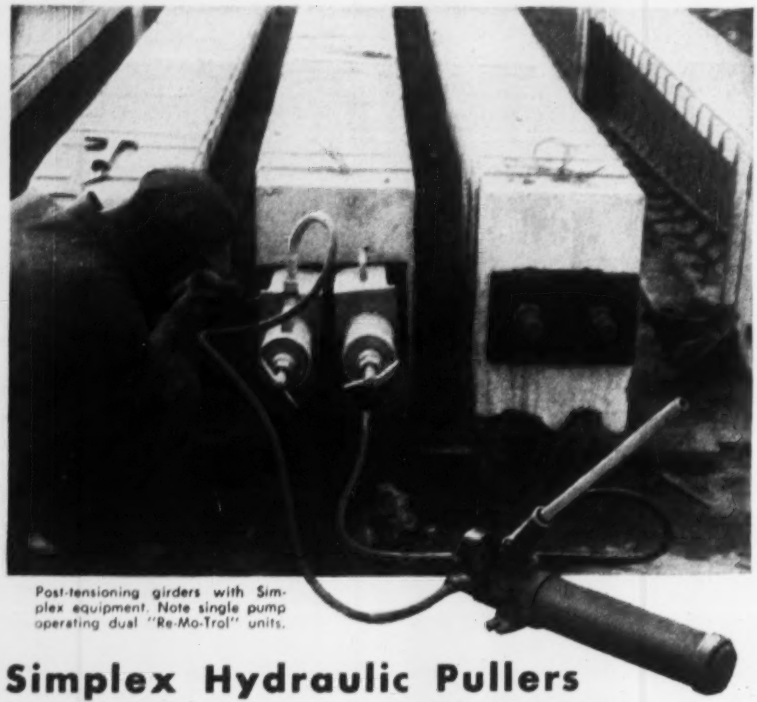
## Tower Is Air Force Base

Sir—I have read with considerable interest your article in the August 16 issue of the Engineering News-Record entitled "Second Texas Tower Rises Over the Sea" (p. 26). I find, however, that there is no reference in the article to the U. S. Air Force. These towers are built for the USAF from funds appropriated by the Congress for Air Force construction. The Navy's Bureau of Yards and Docks acts as the construction agent for the Air Force for their construction. The towers are an important link in the radar defense of the U. S.; and, are operated by units of the Air Defense Command, USAF. It would be appropriate to inform your readers of these facts in any future articles concerning these towers.

The Air Force has no organic construction capability and must conduct its construction program almost entirely by civilian contract. When the Air Force became a separate service in 1947, the basic law provided that the Air Force would use the contract construction capability of the other two Services. The Corps of Engineers and the Bureau of Yards and Docks act as the construction agent for the Air Force in carrying out its military construction program.

The Congress has appropriated more than $1 billion annually for the past few years for the construction of the bases and facilities in support of the presently programmed 137-wing Air Force. About 75% of this amount is handled by the Corps of Engineers, about 10% by the Bureau of Yards and Docks and the remainder by the major Air Force commands.

(Continued on page 12)



Post-tensioning girders with Simplex equipment. Note single pump operating dual "Re-Mo-Trol" units.

**Simplex Hydraulic Pullers Provide Greater Efficiency in Concrete Prestressing Operations**

*Construction Men Acclaim Ease and Safety of Simplex Methods*

Pre-tensioning and post-tensioning concrete becomes a quick, easy task with Simplex hydraulic equipment. Because of the "center-hole" pulling feature of Simplex units, wires, rods and cables can be tensioned without torque, "off center" pressures or complicated back-up devices. Eliminating these factors accounts for a 75% increase in ease and efficiency.

Simplex "Re-Mo-Trol" units consist of a "center-hole" hydraulic pulling ram connected by high pressure hose to a hand, air, electric or gasoline operated hydraulic pump. This powerful combination permits uniform stressing with maximum operator safety and speed. Once the ram is in place, the pump can be actuated safely from any nearby, convenient location.

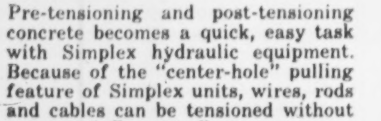
"Re-Mo-Trol" hydraulic pullers are ideally suited to prestressing operations at the job site and for use in permanent pre-tensioning beds. These versatile Simplex units are available in standard capacities from 10 to 100 tons, and can be used for heavy tonnage high-pressure tensioning of cables, rods or wires or for pushing or pulling against a holding bracket in multiple bed stressing operations.

The standard Simplex units provide a range of capacities sufficient for most applications. However, custom-built units are available up to 600 ton capacity.

Another Simplex hydraulic puller, the "Jenny", is a self-contained unit which serves as its own back-up or can be used with a simple chair to reduce set-up time.

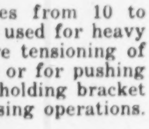
Either device can be used not only as a puller but as a hydraulic jack or press for moving heavy equipment and the like.

**For detailed data on the selection and application of Simplex Pullers for prestressing concrete and other construction jobs, write for your copy of our new bulletin: "Hydraulic 56".**



**SIMPLEX "RE-MO-TROL"**—Remote-Controlled Unit has ram connected to hydraulic pump by high pressure hose for safe, convenient use in tight spots and dangerous locations. A pressure gauge may be installed for checking tensioning pressure.

**SIMPLEX "JENNY"** is a hydraulically operated center-hole puller which also serves as a press or heavy duty jack. It is a self-contained unit available in capacities from 30 to 100 tons.



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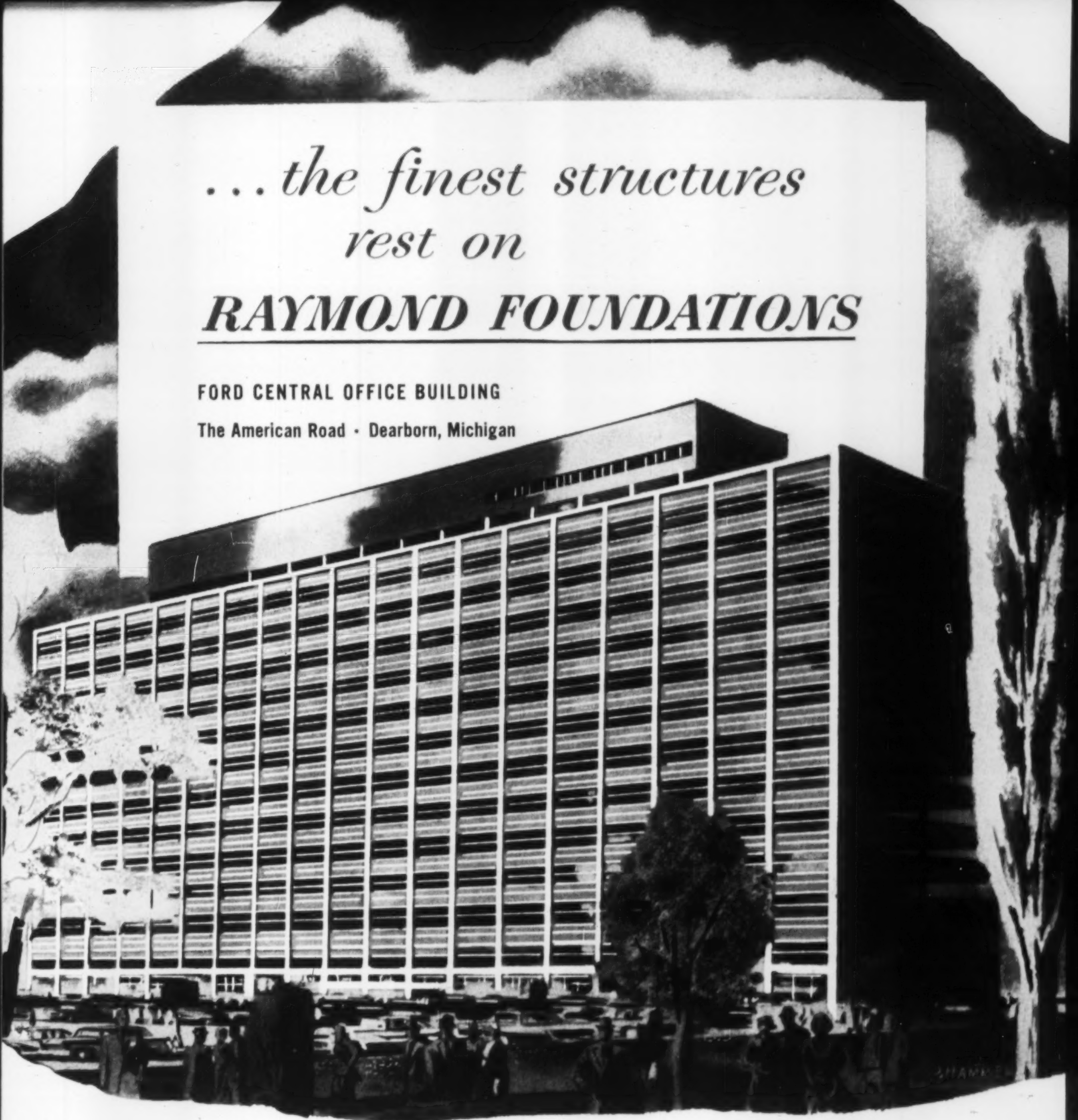

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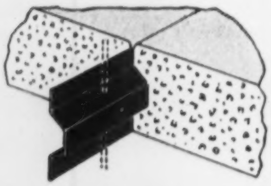

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## Correction

The article on salt-water conversion in ENR Sept. 6, p. 74 contained a pair of incorrect cost figures. The Aruba plant figures should read $3 per 1,000 gal of potable water, not $3 per mg. The conversion cost at the 20,000 gpd African pilot plant was given as $3 per mgd—the correct figure is 30¢ per 1,000 gal, one-tenth the reported cost at Aruba.

## CALENDAR

**American Public Works Association, Public Works Congress,** Texas Hotel, Fort Worth, Tex., Sept. 23-26.

**The Producers' Council, Inc.,** annual fall meeting, Wade Park Manor Hotel, Cleveland, Ohio, Sept. 25-26.

**University of Illinois and Portland Cement Assoc.,** seven lectures on thin-shell concrete structures, Navy Pier, Chicago, Ill., 7 pm to 9 pm, Sept. 25; Oct. 2, 9, 16, 23.

**Air Moving and Conditioning Association, Inc.,** annual meeting, the Greenbrier, White Sulphur Springs, W. Va., Oct. 2-4

**Federation of Sewage and Industrial Wastes Associations,** annual convention, Hotel Statler, Los Angeles, Calif., Oct. 8-11.

**Noise Abatement Symposium,** seventh annual meeting, Hotel Sherman, Chicago, Ill., Oct. 11-12.

**Sixth Annual Drilling Symposium,** The University of Minnesota, Minn., October 11, 12, 13, 1956.

**American Society of Civil Engineers,** annual convention, Wm. Penn Hotel, Pittsburgh, Pa., Oct. 15-19.

**National Safety Council,** 44th National Safety Congress and Exposition, Oct. 22-26, Chicago, Ill., Hotels Conrad Hilton, Congress, LaSalle and Morrison; construction section, Oct. 22-23, Conrad Hilton.

**The Construction Section, National Safety Council,** Conrad Hilton Hotel, Chicago, October 22 and 23.

**American Concrete Institute,** 9th annual regional meeting, Sheraton-Mount Royal Hotel, Montreal, Canada, Oct. 24-25.

**Society for Experimental Stress Analysis,** Deshler-Hilton Hotel, Columbus, Ohio, Oct. 31-Nov. 2.

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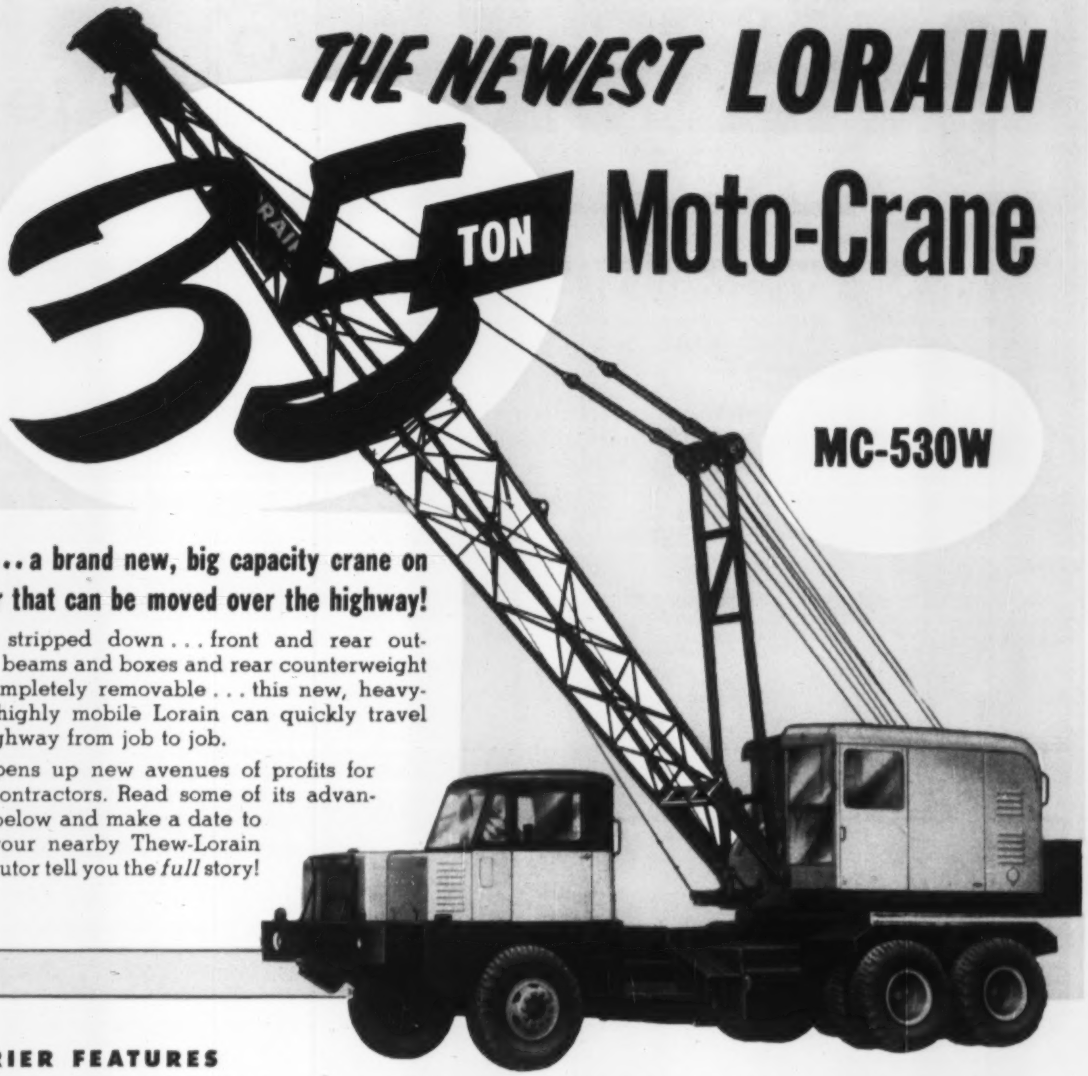

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- Booms with extra wide bases available for extra long boom service (up to 130 ft.—170 ft. with tip).

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They have the exclusive bucket motion with 40° bucket tip-back at ground level and powerful pry-out action.

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Powerful pry-out action and 40° bucket tip-back at ground level get full bucket loads with less spillage loss. Power-transfer differentials provide sure-footed traction for digging power.

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|---|---|---|
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| ONE TRUCK 10-HOUR DAY | $... | 3.50 |
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| 50 TRUCKS-200 DAY YEAR | | $35,000.00 |

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**THE GENERAL TIRE & RUBBER COMPANY • *Akron, Ohio***

**ENGINEERING NEWS-RECORD**

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# THE CONSTRUCTION WEEK

**YANK, GO HOME**—American and other Western-nation contractors need not bid on Egyptian government work. Even low bids won't buy jobs in the currently chaotic land of the Nile. Egypt has announced decision to throw out all bids from Western firms until further notice, a move in line with its general shift of trade and economic relations to "friendly countries"—apparently meaning Communist-bloc nations. Actually, Western diplomatic sources explain, Egypt can no longer pay for Western services anyway; her sterling balances abroad have been frozen by Britain and France and her dollar reserves are getting low. Result of this situation already has a Czech firm offering to build a water filtration plant in North Cairo, a plant in which British and French firms had had an interest. An Egyptian newspaper reports that the Russian embassy has offered to implement a sewage system and other projects for Cairo.

**TV GOES WHERE GEOLOGISTS CAN'T**—Army Engineers, plagued by soil conditions—including slides—at Oahe Dam in Nebraska, resorted to an extensive program of test drilling in an attempt to spot trouble in advance. When calyx-drill holes were sunk, a geologist was lowered into the shaft to get a first-hand report of subsurface conditions. However, the Oahe soil is so treacherous that there was constant danger in this procedure. Besides, the operation could not be carried below the groundwater level in the shaft. Next best thing, Engineers decided, was a TV camera which will do just as good a job without hazard. Equipped with a waterproof housing for below-water-table operation, the unit will be delivered to the job shortly.

**STATE VS STATUTES**—Pennsylvania's Department of Justice has ruled that local governments in the commonwealth can't require the General State Authority to take out building permits for state construction work. Philadelphia uncovered the question on construction within its city limits. Boiled down, the problem was: Is an instrumentality of the state government subject to municipal regulations in carrying out its statutory powers? Said Attorney General Herbert B. Cohen: "It is established law that a statute cannot affect rights of the sovereign unless the sovereign is expressly designated therein."

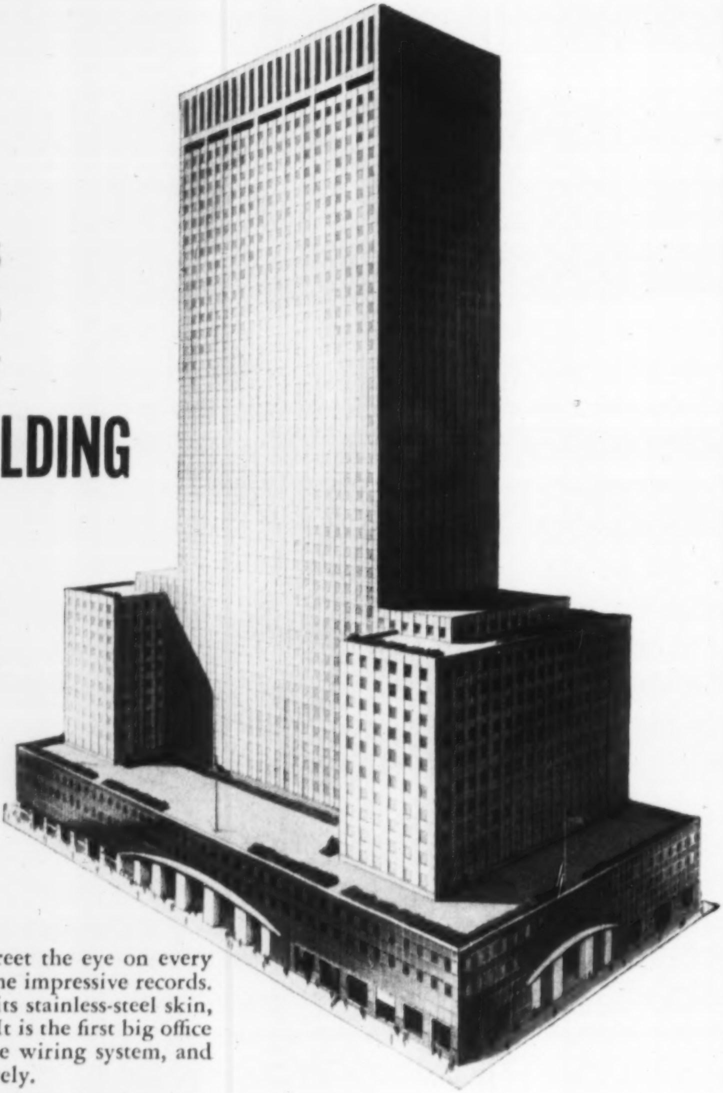
**IN ACCORD AFTER AID**—At odds for many years, Nashville and its surrounding Davidson County joined forces for mutual benefit last week. Both city and county officials voted to apply jointly for federal funds to plan a metropolitan sewer system. The scheme, to be administered by a separate county-wide agency, would cost about $37.5 million.

## JENKINS VALVES

### for another mid-town Manhattan record-maker

# SOCONY MOBIL BUILDING

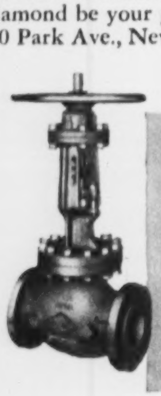
Control vital pipe lines
in giant network serving
"vertical city" of 10,000



In an area where news-making structures greet the eye on every side, the new Socony Mobil Building sets some impressive records. It is New York's biggest in 25 years. With its stainless-steel skin, it is the world's largest metal-clad building. It is the first big office building in New York to use a high-voltage wiring system, and the first to use self-service elevators exclusively.

In choosing Jenkins Valves, however, the builders followed a familiar precedent. They took the same future-minded view of operating economy as the planners of so many of the other notable buildings that shape Manhattan's famous skyline . . . who also specified Jenkins Valves.

For new installations, for all replacements, let the Jenkins Diamond be your guide to lasting valve economy. Jenkins Bros., 100 Park Ave., New York 17.



JENKINS

LOOK FOR THE JENKINS DIAMOND

VALVES SINCE 1864 TRADE JENKINS MARK

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*Associated Architects:* Harrison & Abramovitz and John B. Peterkin
*General Contractor:* Turner Construction Co.
*Mechanical Contractors:* Jaros, Baum & Bolles
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**A DAILY "POPULATION"** of 10,000 office-workers requires, for modern standards of comfort and convenience, piping comparable in volume and variety to that of some cities. The thousands of Jenkins Valves chosen for reliable, efficient, and safe control of major systems in this complex network include Iron Gates and Checks on the main city water supply; Cast Steel Gates with motor operation for remote control on fire lines; and Bronze Valves of all patterns on water, oil, air, and gas lines.

# WASHINGTON OBSERVER

**Appointment of the new Federal Highway Administrator may be delayed** until after the election. This is the new job of heading up all federal highway programs, including the multi-billion new highway construction program just getting under way. The Administrator will rank as Assistant Secretary of Commerce, will report directly to the Secretary, and will be over the Commissioner of Public Roads. Pay is $20,000 per year.

**Reason for delay is that high-caliber prospects aren't interested** in taking the job with the risk that it might be shot out from under them by the turns of politics on election day.

**Administration officials aren't inclined to high-pressure** a candidate. They find that the kind of man they'd like is already in a well-established position in the highway field, which makes it almost impossible for the Administration to ask him to take a political gamble.

**Officials have talked about prospects taking a leave of absence** from their present job, but as of early this week, the odds seemed to be that the job would be held open the few remaining weeks until election.

•

**Rapid expansion of college construction is sure to follow** on the heels of the surprising acceleration of college enrollment. All kinds of facilities are involved: classrooms, laboratories, dining halls, housing.

**Enrollments this year will top 3-million**—an increase of 10% over attendance last fall. Only a year-and-a-half ago, government officials estimated that enrollments wouldn't top 3-million until 1960. Now they are guessing that enrollments will hit 3.5-4-million by 1960, and as much as 5-million by 1965.

**College housing loans are reflecting this swift rise** in the student population. Applications from colleges to HHFA since last summer total almost $500 million; during the previous four years of the program only $300 million in loan requests were received.

**Only a little more than $250 million remains uncommitted** as of now; almost $500 million of the $750-million loan fund has been committed.

**Congress, however, is expected to make more money available** when the present amount is all loaned out.

•

**Look for a drive to split the Atomic Energy Commission into two agencies.** There's such a move being advocated inside the Congressional Joint Committee on Atomic Energy.

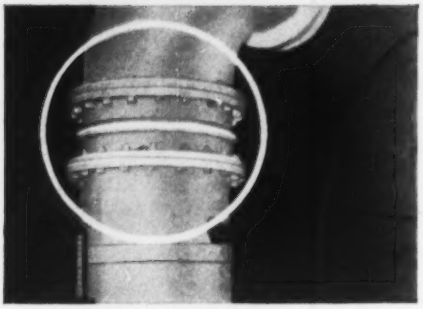
**The idea is to create a separate agency** for licensing and regulation of the private atomic industry. This would be completely apart from the second agency which would operate present atomic installations producing basic atomic materials and conducting research and development.

**The proposal is not a new one, but it is getting more steam** behind it as a result of the controversy over the present AEC's diligence—or lack of it—in pushing a program to accelerate the construction of a variety of power reactors. Basically, the critics feel that AEC as now constituted has a split personality—but that the side of it that should be working to expand the U. S. leadership in civilian atomics has been dominated by the side that's concerned with military applications.

**The latest flare-up comes from the Democrats,** led by Chairman Anderson and Rep. Holifield, who berated AEC for at first refusing to make available the details of a safety report on a reactor it approved for construction in the Detroit area.

**Incidents such as this fire up AEC critics** giving them issues they feel they can use to bring the controversy to a head sooner than expected.

# How long can a U. S. Rubber Expansion Joint last



*. . . some have been on the job since 1926, the year they were invented!*

**Here are just a few reasons why** *these flexible connections are used in pressure or vacuum pipe lines . . .*

- U. S. Rubber Expansion Joints are resilient and, therefore, do not, like metal, set permanently when compressed.
- Constant flexing merely keeps "U. S." joints "alive" . . . prevents them from becoming brittle.
- They absorb both axial *and* lateral deflection far more than metal joints. Greater insulation against vibration and pump noises is provided.
- There is never any electrolysis, corrosion or erosion.
- U. S. Rubber joints handle pressures from 40 lbs. to 125 lbs. Compare!
- The outside diameter of the arch is smaller than that on metal joints. Face-to-face dimensions (even with multiple arches) are smaller.
- Weight is much less. This, plus the fact that no gasket is needed between flanges (unlike metal joints) results in a more easy installation, lowering the cost.

"U. S." was the first to develop rubber expansion joints. They are at work in every kind of industry, prolonging the life of equipment in pressure or vacuum pipe systems. Obtainable at any of the 28 "U. S." District Sales Offices, or write us at Rockefeller Center, New York 20, N. Y.

US RUBBER

Mechanical Goods Division

**United States Rubber**

ENGINEERING
NEWS-RECORD

## U. S. Construction: How Fast Should It Go?

| *Some economists say . . .* ⬇ | *Engineering News-Record says . . .* ⬇ |
|---|---|
| **• Too much of our investment has been based on borrowing** | **• Needs are still outrunning current construction volume** |
| **• Plant investment is rising too fast relative to current production** | **• Inflated dollars overstate the real volume of physical construction** |
| **• Investment is limited to savings and savings are declining** | **• Much new construction merely replaces existing obsolete facilities** |

# Is the Big Boom Big Enough?

### An ENR Staff Report

With new construction well on the way to still another record-breaking year, some bankers, economists and other observers are citing "danger signs" to support a far-reaching, highly-explosive theory: The U. S. is building too fast.

But, other evidence abounds that we may not be building fast enough.

This hot question has moved from the bankers' paneled board rooms to government offices. Which answer the government accepts—"too fast" or "not fast enough"—will directly affect business prospects for contractors and the entire construction industry for the next few years.

Here are some of the key facts to keep in mind:

- As big as construction is today, it is not keeping up with demonstrated needs.
- Rapid population growth and population shifts are overloading existing water supply, waste disposal, transport, school and other facilities.
- Higher employment and the resulting increased disposable income create demand for goods and services on a scale that strains existing production, business and service industries' facilities.
- The rise in costs has made construction expenditures look higher than the physical volume actually is.
- All new construction is not added capacity; a high percentage merely replaces obsolete facilities.

The figures that support these facts are significant.

## • Growing Needs

Demonstrated needs for construction are racing ahead at the same time that the rise in construction activity is slowing down. The gap is getting wider between what the nation needs and what it is building, the chart at the top of page 22 shows this clearly.

It shows that the ENR backlog of Proposed Heavy Construction has increased much faster than heavy construction contracts during the past year. This buildup in the backlog means that new projects are entering the planning stage faster than projects are coming off the drawing boards and into contracts.

The backlog now totals $102 billion—nearly five times the record $21.2 billion in contracts that ENR estimates will be awarded by the end of this year.

During the first eight months, the backlog of work in the planning stage increased $8.6 billion, compared with an estimated $2.5-billion increase in contracts for the entire year.

New work entering the planning phase in the first eight months ran up a record total of $172 billion. During this same period, heavy construction contract awards set a new high of $15 billion, but only about half of this came out of the ENR backlog.

The resulting rapid buildup of proposed work is the best indicator of what, where and how much future construction is needed. It clearly shows the trend in contract awards and charts well in advance of what the value of construction put-in-place will be—if the construction industry is permitted to fill the orders without government's restraining hand on its shoulder.

"But," some ask, "why is this backlog of construction rising?" Many of the reasons for the rise date back to the start of the postwar period. Basically, it's the story of more people, more jobs, more money to spend.

In the 16 years since 1940, the U. S. population has increased more than 27%. As a nation, we have added 36,000,000 people and created a vast new market for housing, water supply, schools, highways, waste-disposal and many other facilities.

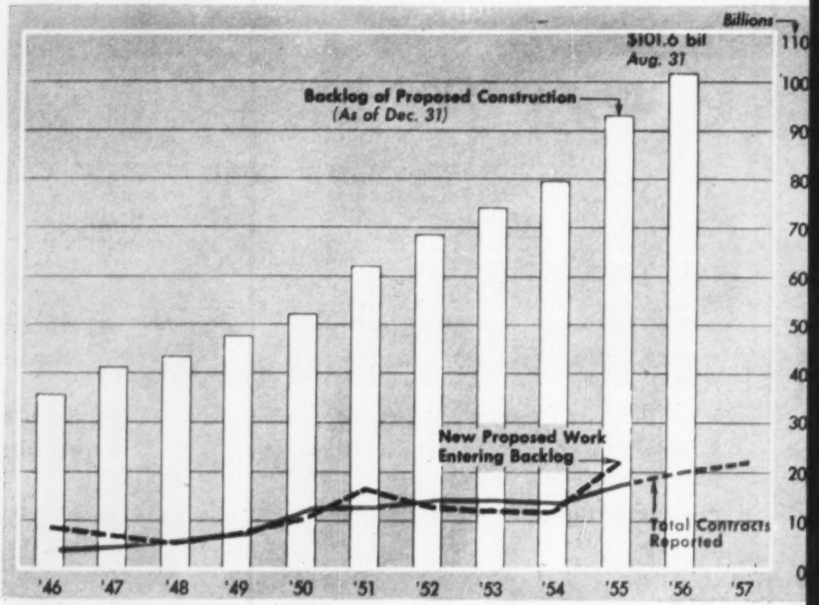
Large backlogs still remain, with the possible exception of housing. And, the pressure for more of these facilities will continue to build up with further increase in population.

There have been more jobs. Although the labor force hasn't grown quite as fast as population—the nation's pool of workers has gone up 25% since 1940—total employment jumped more than 40% in the same period.

Increased employment has added to the total purchasing power for homes and other goods and services. To fill this bigger market basket, business has been under pressure to add industrial capacity and build more

# Why Construction Industry Needs to Raise Its Sights

• • • ▶



**1.** Construction needs (Reflected by Proposed Projects) are building up faster than Contracts Let

commercial facilities. That pressure, too, is getting stronger by the day.

The backlog of construction needs also has been rising because of market changes in the living and buying habits of the nation.

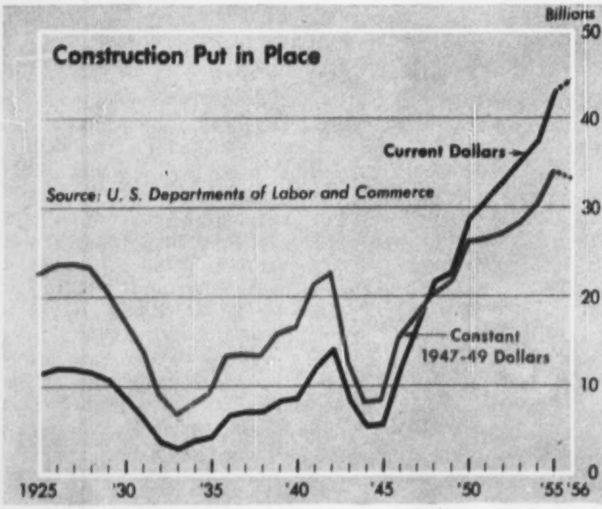
A new era dawned after World War II when a large part of the population traded an apartment in the city for a house in the suburbs, partly because there were more would-be renters than apartments, partly because easy credit put home ownership within the reach of young families and lower-income groups.

The nation still has not satisfied the demand for water supply, waste disposal, shopping centers and schools in suburbia or exurbia.

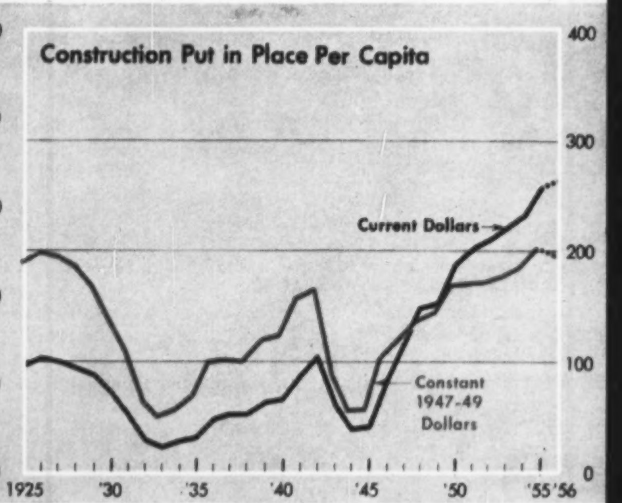
This, in fact, points up one of the revolutionary changes that has come in the wake of World War II. Prior to the war, mass housing developments were rare. New homes were built in established areas, one or two at a time on single lots. The newcomers created no community problem—and few construction demands beyond the four walls of their own homes. They tapped into existing water and sewerage systems, sent their children to an uncrowded local school, bought their food, clothing and other necessities at stores—to which they often walked.

But, the picture now is completely different. The mass housing developer builds not one house or two. He builds a hundred or two hundred or more. He doesn't build on single lots within the city but on large, onetime potato field as much as one hour's ride from the city.

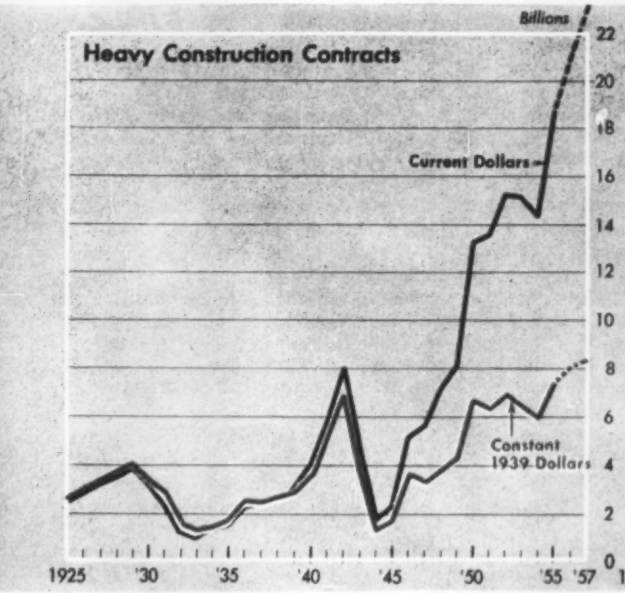
Overnight, the small town's water supply becomes inadequate. Additions must be made or new sources developed. A construction demand pyramids. Sewerage systems and existing treatment plants become inadequate. Another construction demand develops. Even half-day shifts fail to meet the needs of the 300, 500 or 1,000



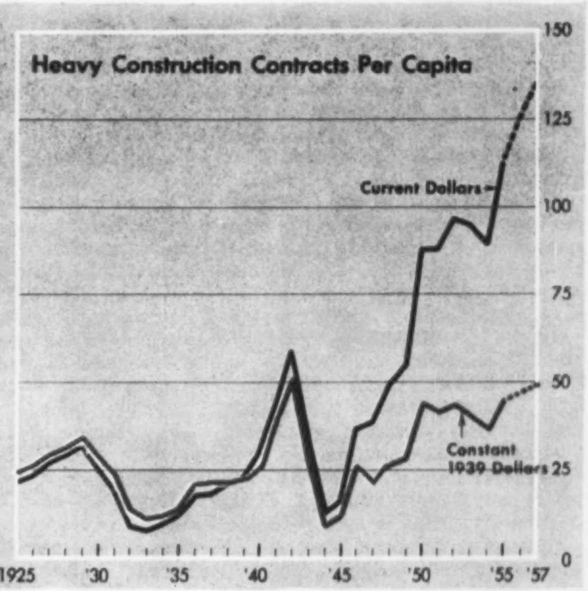
**4.** Rising Costs Overstate Real Volume of Construction Put in Place



**5.** Current Construction Is Actually No Higher than in the Mid-1920' When Adjusted for Population Growth and Rising Costs



**2.** Most of rise in Construction Contracts Reflects Higher Costs



**3.** Population Growth Is Also a Factor in Construction

children suddenly added to the local school population. Still another construction need becomes insistent. Small shopping centers are needed close by and larger centers within driving distance. Construction needs developed commercial building and highways.

Industry, too, has been on the move, from city to suburb, and even from region to region.

When major plants move into a new area, new communities develop and within a short time, light industrial plants—often suppliers of the big plant—build in the same area. This either overloads the old highways, or creates a new local housing demand, or both. And the cycle starts again.

The need for more construction soon becomes obvious, but how have these needs developed when construction has set one record after another?

## • Wringing Out the Water

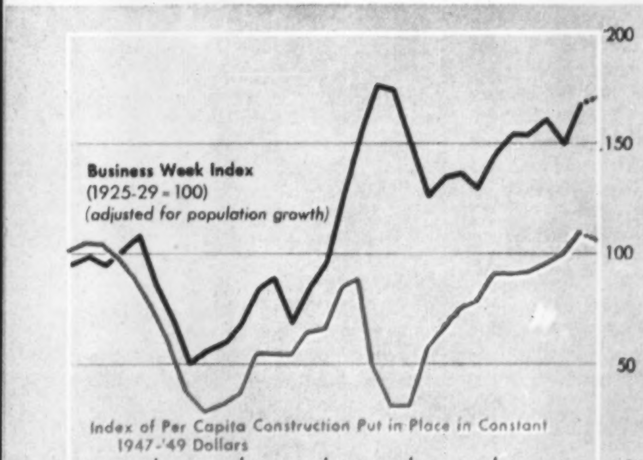
Contract award totals and the value of new construction put-in-place are piling up substantial increases in dollar volume this year.

By the yardstick, it might seem that the U.S. is building too fast. For example, during the seven years 1950-56, expenditures for construction put-in-place totaled $253 billion. That's equal to the total dollar value of all new construction put-in-place in the preceding 26 years. The comparison could easily lead to a fear of boom-and-bust. But it shouldn't—beause the yardstick is a poor one.

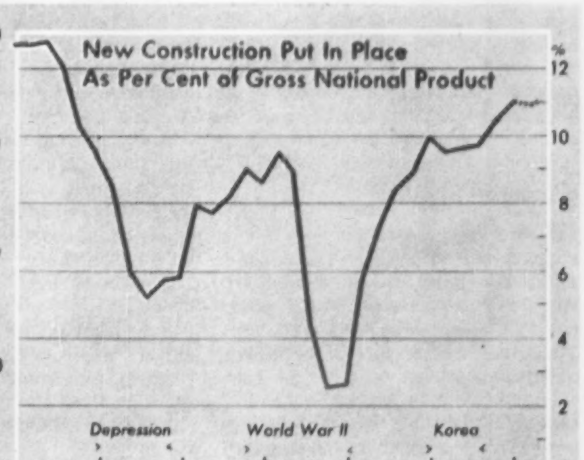
These figures do not measure adequately the physical volume of new construction because the records are being posted in inflated dollars.

Wringing the inflation water out of the figures for construction put in place, by using 1947-49 constant dollars, changes the "super-boom" label for the 1950-56 period.

*(Continued on page 24)*



**6.** Construction is Not Keeping Up with Business Growth



**7.** Construction Rises Slightly Faster Than Total Output Since 1950
... but It's Share Is Well Below the 1925-27 High

(*Continued from page 23*)

On the basis of dollar totals—inflated dollars—for construction put in place, the U. S. built as much in the 1950-56 period as in the preceding 26 years. But, on the basis of constant dollars, outlays for put-in-place from 1950-56 shrink to half of the earlier period.

Per capita construction put in place in "physical terms" during the seven years 1950-56 was only 1% more than in the seven years 1923-29. And, average per capita construction in constant dollars during the 11 postwar years 1946-56 was actually 10% below the 1923-29 average per capita.

Only in 1955 and 1956 did real per capita construction put in place top the old 1926 record. Moreover, real per capita expenditures dipped in 1956, according to unofficial estimates, to 3% below the 1955 record and only a shade above the $202 per capita spent in 1926 (measured in constant 1947-49 dollars).

Another test of the question of whether we are building too fast—or not fast enough—is the amount of new construction that is merely replacing obsolete facilities.

There are no figures that accurately measure this for all types of construction. But, almost half of industry's record expenditures this year for new plant and equipment will be for replacement of outmoded or outworn existing facilities.

Another example of "replacement" is urban renewal. In many urban areas, slum or semi-slum housing, commercial building and even industrial building has been torn down and replaced with new modern structures. But, the new construction doesn't represent a complete gain. Often, a project of 400 units, for example, is built on a site where slum dwellings housed 200 or 300 families. The "net gain"—the addition of space available to live or work—may be far less than the new construction figures indicate.

Finally, construction is needed always to replace structures lost through such disasters as fires, floods, tornadoes.

## • Danger Signals?

These facts argue strongly for a construction rate that would—at a minimum—build as fast as in 1955 and 1956 or, preferably, at a faster rate. But some observers do not agree. They see "danger signals," warnings of future economic trouble.

A sharp rise in private, state and municipal debt has accompanied almost every record set for construction in the postwar period. This has resulted in a decline in liquidity of private assets.

Individual long-term debt has risen fast. But, this reflects the unprecedented shift to home ownership plus inflation of construction costs.

Consumer debt has increased this year but at a much slower pace than during the same period last year (due to reduced auto sales). As long as general economic conditions remain good, consumers probably will continue to use time payment plans to get the goods now and pay later. And, that means that consumer debt will continue to rise, just as long-term individual debt will go up. But consumer debt probably will not continue to climb as fast in relation to disposable income as it has been doing in recent years.

## • Industry Building Too Fast?

In addition to worrying about the rate at which U. S. industry and individuals have accumulated debt, some economists are afraid that the booming rise in plant expansion is hitting dangerous levels.

These men feel the "capital ratio" is getting too high. In other words, U. S. industry may be spending too much for plant and equipment considering the volume of goods produced.

But the validity of this ratio can be challenged in the light of changing production economics. Higher productivity hinges on increasing investments in more efficient plants and more machines. This is essential because the demand for goods in the next decade is expected to rise faster than the number of man-hours available to produce those goods.

For the long pull, it is clear that industry must continue to spend—and spend heavily—for new plant and equipment. But some observers ask if industry isn't expanding too rapidly right now.

They point to the fact that the rush for new plant and equipment has disrupted the money market and made financing difficult for some other types of construction.

And, there is a valid argument that this surge in industrial building has brought with it a sharp inflation in machinery prices and is even forcing construction costs up substantially for industrial building.

But even here, the question is where should the line be drawn?

Few, however, would defer the steel industry's $1 billion per year expansion program, for example, especially when the industry is not able to meet present needs, let alone future demands.

## • Are We Saving Enough?

The last major danger signal that economists raise is in the highly complex field of bank credit. Those who think the U.S. is building too fast ask the question, "Are we saving enough to sustain such a high level of new construction and other investment?" Some think the answer is "no" and they advocate a slower rate for construction—"more compatible with the growth in savings."

How do savings and bank credit affect the construction boom?

Because of size and long-term use, construction projects traditionally have been financed through borrowing rather than on a pay-as-you-build basis.

Construction is a key investment for savings. But savings alone cannot always finance the volume of construction needed.

When construction volume must rise faster than new savings and debt repayments permit, some of the new work must be financed by bank credit.

Bank credit is necessary for economic growth; but the amount of bank credit must be controlled to prevent runaway inflation. Then expansion of bank credit threatens to get out of hand—as the Federal Reserve Board believes it does right now—credit is tightened in an attempt to forestall further price inflation.

This credit tightening, reflected in higher borrowing costs and in a scarcity of available loan funds, can have drastic effects on the construction industry.

The Federal Reserve's tools for carrying out a tight money policy are not selective in their application—but they are highly selective in their results.

Industry has crowded other construction borrowers out of the money markets because it is in a better position to compete for investment funds available from banks and institutional lenders.

Bank loans to industry have swelled; some big institutional lenders are committed almost to their lending limits. Industry can't afford even current high borrowing costs because of the 52% corporate tax rate; it is renting this money with 48-cent dollars.

Other borrowers have been hit. As a result, contract awards for housing have slumped; commercial building is sliding. State and municipal construction is slowing down.

Continuation of the tight money policy could upset the applecart for construction. Last year's balanced boom is giving way to imbalance.

No one feels that the lid should be removed from credit entirely. But, there must be a gradual easing of the money market or some key types of construction will be in serious trouble.

Downturns in construction activity will mean that the nation will fall still farther behind its needs, and the nation's growth will be hampered.

# Pickle Liquor Plant

## Pilot installation ready to treat sulphate liquor by new Blaw-Knox method

Three years of research and development were capped this week as a $500,000 pilot plant for treatment of acid steel-plant wastes was unveiled by its builders at Niles, Ohio.

It is a plant that will test the Blaw-Knox Ruthner process for treatment of waste pickle liquor, most serious stream pollutant of the steel industry. The process, which converts sulphate liquors to useful sulphuric acid and iron oxide, was conceived by Austrian Othmar Ruthner after World War II and has been developed to its present stage by Blaw-Knox Co. over the last three years.

Co-sponsoring the development work and the new pilot plant with Blaw-Knox have been seven major steel companies: Jones & Laughlin, National Steel, Pittsburgh Steel, U. S. Steel, Wheeling Steel, and Youngstown Sheet & Tube.

The demonstration plant, called semi-commercial and rated to produce 650 tons of sulphuric acid per year (ENR Dec. 29, 1955, p. 27), is to utilize quantities of waste pickle liquor from Republic Steel's Niles plant. Sulphuric acid produced in the process can be reused in the pickling of steel; iron oxide derived can go back in the blast furnaces. This is an improvement over present practice of neutralizing waste acids with alkalies and winding up with an abundant sludge for lagoon disposal.

# Ocean Outfall

## Sulphate paper wastes to go deep into Pacific

Georgia-Pacific Paper Co. has offered to pipe strong waste liquors from its planned Toledo, Ore., sulphate process kraft paper mill into the Pacific Ocean to meet Oregon State Fish and Game Commission objections that direct disposal into Yaquina Bay might kill off commercial oysters planted in the bay and affect the off-shore feeding of salmon on ocean herring. Weaker effluent would be dumped in the bay.

G-P's offer came at an Oregon Sanitary Authority hearing in Portland on the corporation's waste disposal plans for the $18-million paper mill, G-P's first, and now under construction. William J. Shelton, resident manager of Georgia-Pacific at Toledo, reported the discharges contemplate .5 mgd of strong effluent, 1.7 mgd of weak effluent and 4.3 mgd cooling, lubricating and mill service water.

The paper company said its plan to pipe the strong effluent out into the Pacific for discharge contemplated discharge of weak effluent and service water into the head of the bay at the Toledo plant after treatment in an oxidation pond. The State Commission had proposed the mill be required to pipe all effluent to an ocean outfall.

As an alternative to its first plan, G-P proposed all effluent be discharged at McLean Point, near the mouth of the bay, whenever discharge into the river would reduce the dissolved oxygen content below the 5 ppm.

Cost of the McLean Point line and a diffusion system to avoid concentration of wastes at the outer bay outfall was estimated at $756,000. To carry all wastes into the Pacific, the cost was estimated at $900,000.

# Safety Ruling May Be Costly

An expected public safety ruling affecting contractors on New York State highway projects was posted in plain terms last week by State Superintendent of Public Works John W. Johnson.

The ruling may prove to be a costly one for contractors. The provision making them responsible for the safety of the public will be written into all future contracts for urban highway construction. And "the public"—as defined under the new code—includes "anyone who for any reason enters the work area."

Influenced heavily by a tragic cave-in that claimed lives of six children in Brooklyn, N. Y. on June 12th (ENR June 28, p. 100) and a subsequent controversy between State Attorney General Jacob K. Javits and City Construction Coordinator Robert Moses over city versus state liability in such cases (ENR July 19, p. 25), additional requirements are spelled out.

In addition to placing responsibility directly on the contractor, other provisions require that:

- All contractors employ watchmen on their projects.
- Proper warning signs be erected.
- Liability insurance be carried with a minimum coverage of $500,000 for each person and $1,000,000 for each accident.

The old requirements for liability insurance coverage were $50,000 per person and $100,000 for each accident.

• **How is contractor affected?**—Many contractors already carry bodily injury and property damage policies far in excess of present minimum state requirements but those who consistently carry minimum coverage will find their positions altered considerably.

Premiums on ordinary excavation projects will increase approximately 22% over former low requirement policies. For projects involving underpinning, dewatering, sheeting or other operations considered to embrace a degree of risk, premiums could rise to about 33%.

For property damage coverage there are again common and hazardous classifications, the latter involving collapse, explosion or underpinning. For coverage increases in the same magnitude as those for bodily injury, premiums could rise about 50%.

The more stringent the terms of the contractual agreement between the state—or city—and the contractor, the higher the premium will be. For example, if the state demands and gets a "hold harmless" agreement that absolves the governmental agency of all blame regardless of circumstance, insurance companies will have no alternative but to raise contractors' costs still further.

## Indicted in Cave-in Case

**Less than 24 hours after announcement of stringent new safety provisions on state roadbuilding projects within cities of New York State, five construction company officials were indicted in the June 12 Brooklyn cave-in that was fatal to six.**

**Acting closely on the heels of adoption of the new safety code, which places responsibility for such accidents squarely with the contractor, a special grand jury charged the five with second degree manslaughter "as a result of gross and culpable negligence of duty." The presentment said that they did "feloniously and willfully create or cause to be created and permitted to exist" a dangerous excavation site openly frequented by children, an "inherently dangerous condition and deceptive trap to the unwary."**

**If convicted of the six-count indictment the construction officials could receive maximum sentences of 15 years each. Those named in the indictment are: Louis Joseph, executive vice president and chief engineer of Horn Construction Co., Inc.; Martin Schlam, supervising engineer of the Horn company; Vincent Pedone, Horn foreman; Anthony D'Aquila, vice president-supervising engineer, and Salvatore Garifo, foreman-superintendent of Service Excavators, Inc., subcontractors on the highway excavation involved in the tragedy.**

# Buy American?

### Suit challenges purchase of Priest Rapids turbines

A "taxpayer's suit" filed Sept. 4 in Grant County Superior Court at Ephrata, Wash., challenges the right of Grant County PUD to purchase turbines and governors for its Priest Rapids powerhouse from the Allis-Chalmers Co.

The low bid of Merritt-Chapman & Scott Corp. for construction of the power project was based upon turbines to be provided by English Electric Co. of Stafford, England, the suit asserts. The bidding was on plans expressly permitting foreign equipment, said E. C. Olander of Moses Lake, the sueing taxpayer.

After acceptance of the general contractor's low bid for the project, however, the PUD entered into a supplemental contract of option with Merritt-Chapman & Scott to substitute Allis-Chalmers Co. as the manufacturer of turbines and governors instead of English Electric Co. and Pelton Water Wheel Co. The substitution involves an additional cost of $500,000.

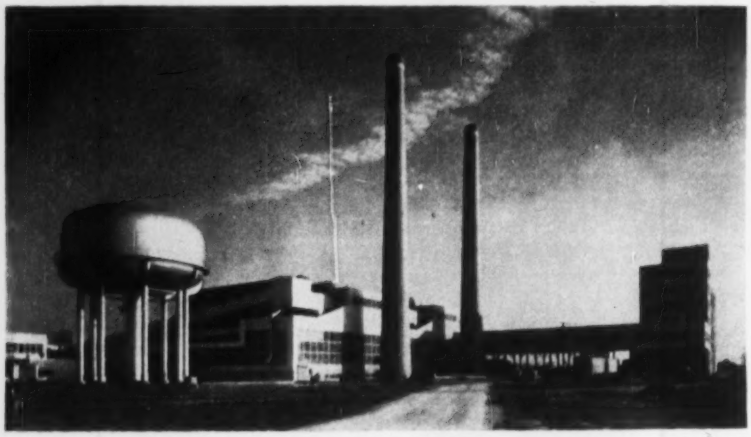
It is illegal both under state law and international treaty for the PUD to pay extra for the American equipment, after acceptance of a low bid, declares Olander's suit. Olander contends that the PUD's action was made under pressure by power purchasers who opposed purchase of foreign turbines.

- **For the defense** – Commissioner George Schuster has defended the PUD action by stating:

"We are not, as has been claimed, trying to force any foreign manufacturer to withdraw from competition on the project. English Electric still is supplying some $13.5 million of generators and transformers for Priest Rapids.

"However, English Electric has not had experience in building turbines of the size called for in the contract documents. The largest turbines previously built by them had a diameter of 189 in., while Priest Rapids turbines are to be 280-in. dia."

Referring to allegations the PUD had been pressured into making the substitution, Schuster declared that "the recommendations of many different people and organizations, including the power purchasers of the Priest Rapids Development, were considered before the decision was reached. These power purchasers, many of whom have had a great deal of experience in building large electric generating facilities, have individually and through the Advisory Council, set up in the power sales contract, requested the PUD to exercise its option to use Allis-Chalmers turbines."



# Plate Glass Gets $54-Million Boost

Twin 213-ft stacks reach skyward at this new East Toledo, Ohio, plant of Libbey-Owens-Ford Glass Co. The plant is a major portion of a $54-million expansion for the plate-glass firm. With the expansion, the company will put this plant—and one at Ottawa, Ill. —into operation to increase its capacity for making polished plate glass (by conventional methods) some 50%.

Each stack marks an 1,100-ton continuous plate-glass melting furnace. The East Toledo expansion (including the two furnaces, a grinding and polishing line, and bending and laminating facilities) was completed and put into operation in nine months. At the same time, a new building was constructed to add 250,000 sq ft to the Ottawa plant. The program also included expansion of two plate-glass units at L-O-F's Rossford, Ohio, plant.

# Sewage Plant Hit

### Odoriferous facility is called "costly experiment"

Voicing complaints of his constituents—relative to alleged poor handling of sewerage facilities built by the Sanitary Sewer District of Kenton and Campbell Counties within the city of Bromley, Ky.—Mayor Ernest Due has leveled a double-barrelled charge at the district. Describing the facility as "simply an experiment and a costly one," for the taxpayers of the two counties and his city, his statement claimed:

- That the treatment plant should not have been built within any city.
- That the background of the persons responsible for the building of this plant was not investigated and they had no knowledge of the operation of such a plant.

Cause of the complaints—which have resulted in a grand jury investigation—is an obnoxious odor condition. The odor problem first came up in May 1954, shortly after the district plant went into operation. An injunction was obtained in June 1955, ordering that the plant be shut down (ENR June 9, 1955, p. 23). Since that time, the district has attempted to discharge waste and sewerage into the Ohio River in Bromley through a 36-in. concrete line which has reportedly broken off, strewing sewage over the river bank.

# Out of the Red

### Rise in revenue forecasts first-year profit for pike

With the heaviest traffic in its history now behind it—the Labor Day weekend—Ohio Turnpike officials announced jubilantly this week that the 240-mi tollroad would definitely end its first year of operation in the black.

Chairman J. W. Shocknessy said that revenues for the five-day holiday period, exclusive of revenue from concessions and commercial credit accounts, were $323,089. With this dollar boost, Shocknessy said that revenues for the first year of operation (the pike opened in October 1955) will approximate $14,285,000.

"Operating expenses for the first year will be about $3.5 million and interest requirements are $10.6 million. This leaves an estimated profit for the 12 months—for application to debt—of over $700,000," the chairman commented.

Shocknessy noted also that the holiday period attracted a total of 272,092 vehicles to the road.

Sharply stung some months ago when critics saw the pike as a possible financial failure, Shocknessy, couldn't resist a dig at pike detractors. "A couple of months ago," he said, "I told the precursors of doom to slither back to their caves and wail their heads off, because the Ohio Turnpike was an assured success. If those prophets still have heads on their shoulders . . . it is suggested now they stick them into pools of muddy water and drown themselves."

### Indiana Plant to Have 450,000-kw Steam Unit

American Gas & Electric Co. announced last week where it will put one of its two planned 450,000-kw steam-power generating units. The record-size installation will be made by the Indiana & Michigan Electric Co. on the Wabash River south of Terre Haute, Ind.

It was also revealed that a 6-mi railroad will be built to tie the $58-million plant with a new coal mine to be opened especially to serve it.

## Bigger and Longer

### Omaha District of Army Engineers changing over to continuous contracts

The Omaha District office of Army Engineers is changing over to continuous contracts to handle the stepped-up program of Missouri River channel improvement work.

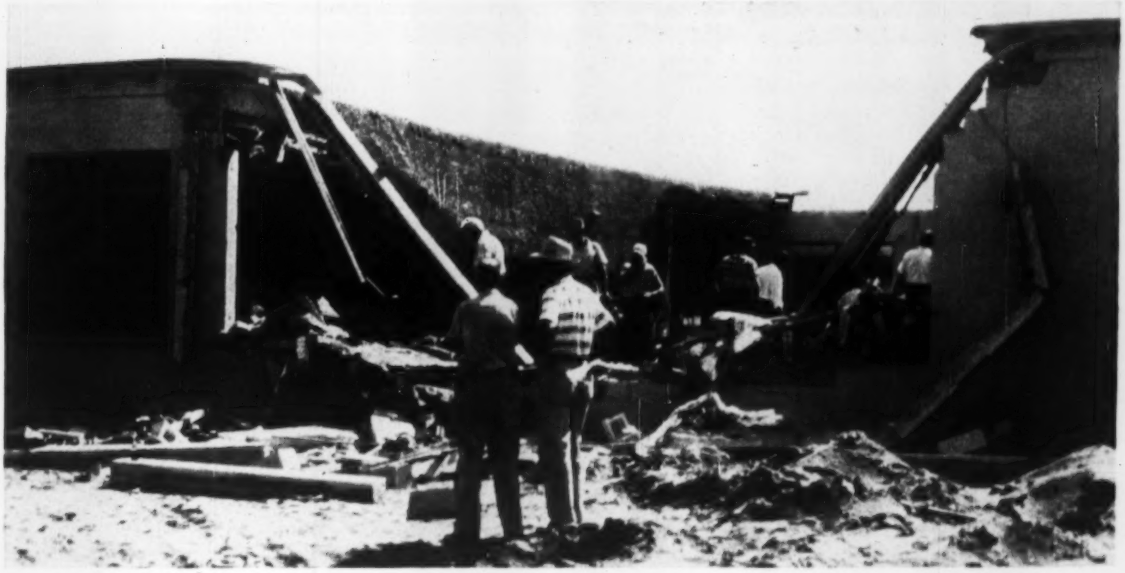
River work in the past has been carried out under one-year contracts as Congress made money available. The government's fiscal year starts July 1, which meant that work couldn't be started until that time, while the jobs had to be wrapped up before the fiscal year expired.

This resulted in some lost motion. The jobs came up at the peak of the construction season but getting mobilized would delay the start of actual work until around October 1, when the season was tapering off. At the other end of the year, a contractor might finish a job early and equipment would be idle until the next fiscal year.

While this situation did not pinch too hard so long as river jobs were small, the conflict has come into focus now that the scope of river jobs is being stepped-up. Where an average contract formerly ran around $200,000 the Omaha District now has $800,000 jobs under contract and is readying one that may run $1 million. The $10.9 million in work being carried out by the Omaha District this year is more than double the sum allocated a few years ago.

To handle this volume of work more efficiently, Army Engineers have turned to the continuous contract set-up that was used on the big dams upstream.

The Omaha District now is in the process of shifting over from the one-year to the continuous contract and will carry out its first work on the latter set-up next spring. Its jurisdiction extends from the authorized head of navigation at Sioux City to Rulo, Neb. The Kansas City District, which has responsibility for the river from Rulo to the mouth, also is preparing to go on a continuous contract basis.



## School Roof Collapses, Inquiries Under Way

Several investigations are under way to determine why the prestressed concrete roof of a one-story school building in Orlando, Fla., collapsed in a rainstorm in the early morning hours on Aug. 31.

The roof spanned 56 ft over the "cafetorium" of the $404,000, 24-classroom Frances L. Blankner Elementary School. It was supported on 8-in.-thick concrete block walls with 7-ft.-wide window openings.

In the collapse, eight five-ton T-shape pretensioned beams fell to the floor, bringing down with them one wall and a roof section about 32 ft wide.

Completed about one week before the failure, the building was unoccupied at the time. Clues are being sought in the wreckage to determine whether the beams or the wall failed first.

The roof had been designed for a live load of 20 psf. The school's prestressed concrete classroom roofs, which have smaller spans, plus overhangs, have been examined, and one classroom has been tested to 150% of design load and declared safe.

Robert Murphy, Orlando, is the architect. The prestressed beams were fabricated by Stresscrete, Inc., Leesburg, Fla., under subcontract to Huffman Brothers, Orlando, the general contractor.

# Survey by Computer

## Machine will speed data processing on U. S. streams

The U. S. Geological Survey is now intergrating an electronic computer into its data processing setup that produces the annual 18-volume tabulation, "Surface Water Supply in the U. S."

When fully operational, the computer will relieve 250 technical employees in 50 USGS field offices from having to spend much of their time making interpretations of river-gaging station charts.

"SURWAC" (Surface Water Automatic Computer) receives original record charts—a plot of height of river against time—from 7,000 gaging stations. It scans the chart photoelectrically to determine gage height at intervals of 1/100th of a day and then computes and punches out on a tape the daily mean gage height.

At the same time, a second computing unit calculates the average daily discharge which is punched out on a separate tape.

Both tapes are then run through a machine that automatically reads them and prints daily averages in chronological order.

SURWAC is a special-purpose computer containing both digital and analog components. Gage heights are handled by the digital unit while flow rates are computed in the analog section, employing voltage to represent flows.

### Higher Pay for Engineers Sought by State Official

Arkansas State Highway Director Herbert Eldridge plans to ask the 1957 state legislature for authority to hire more construction engineers and to pay them higher salaries.

One of the results of the new federal highway program, Eldridge notes, is that competition between states and private firms for qualified engineers has increased. "We were short of engineers before the act was passed," he said. "We stand to lose some of those we have who can go to work for engineering consultant firms and highway contractors at higher salaries."

According to Eldridge, department pay scales for engineers now range from $6,900 to $8,400. Pointing out that "qualified men won't go to work for us under the present salaries," he said the state on several occasions has been forced to hire outside consultants at higher rates.

Projects on which outside consultants have been called in include the Third Bridge-Expressway at Little Rock, the Mississippi Bridge at Helena, the El Dorado bypass and relocation of Highway 61. Eldridge estimates that the state will pay more than $1 million to consultants on the expressway project alone, and said he could hire his own engineers for such work if he were able to pay higher salaries.

### Diversion of Highway Funds Stirs Up a State Dispute

The North Carolina State Highway Commission has launched an effort to halt what it calls "diversion" of about $3 million per year of road funds. The money—raised through a ¼-cent-per-gallon inspection fee on gasoline—now goes into the state's general fund instead of the highway fund.

According to the commission, the annual cost of administering the inspection program is about $500,000. It contends that the inspection fee should be eliminated and the cost of the program paid from highway funds—or else the money raised by the fee should be deposited in the highway fund.

Suggestions already have been made for an amendment to the State Constitution to prevent diversion of the gasoline inspection fee, which is in addition to the regular seven-cent gas tax.

Meanwhile, the commission has brought the matter to the attention of a committee looking into reorganization of the highway department, an advisory budget commission, and a tax study commission.

# Palisades Dam Ready to Store Water

The Bureau of Reclamation's $62.5-million Palisades project on the Snake River in southeastern Idaho is scheduled to go into operation in October, when water storage will start.

The main embankment of the 13,800,000-cu yd structure is 90% complete. The largest earthfill dam ever built by the bureau, it measures 270 ft high, 2,100 ft long at the crest and 2,100 ft wide at the base (ENR, Dec. 31, 1953, p. 28). The crest (at el. 5,630) will be level with the access road shown on the far (left) abutment.

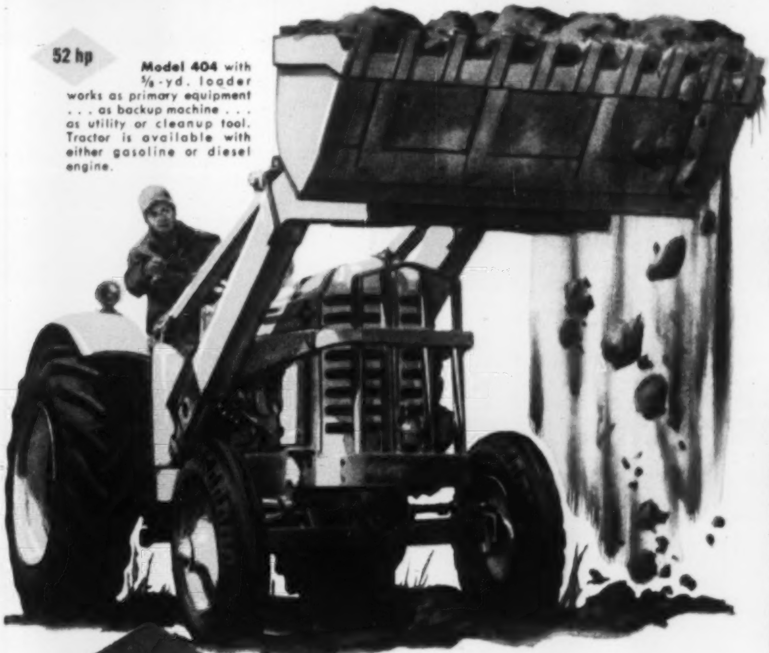
Upstream, work is proceeding on intake structures for three tunnels—the spillway, outlet and power tunnels. Downstream, the stilling basin is completed and in use.

Work on the project actually started in 1949 with the diversion tunnel, but delays in getting funds stalled major construction until January, 1952. Two more years will be required for cleanup—finishing highway relocation, winding up work on a fish hatchery and powerhouse details, topping out the dam, installing fire-control equipment, putting a log boom across the reservoir, and rip rapping.

Some $55 million has been spent on the project to date. Prime contractor is Palisades Builders, Inc.

The 1,400,000-acre-ft reservoir is designed mainly to provide supplemental irrigation water for 650,000 acres of land in the Upper Snake River Valley, but it also has power generation and flood-control features. First of four 28,500-kw generators in the 114,000-kw power plant will go on the line early next year.

# GREAT NEW IDEA in tractors and attachments



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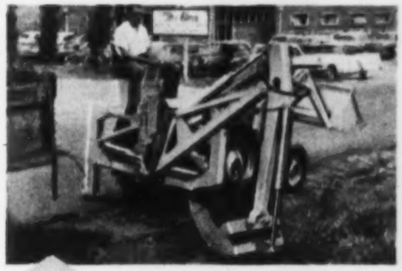
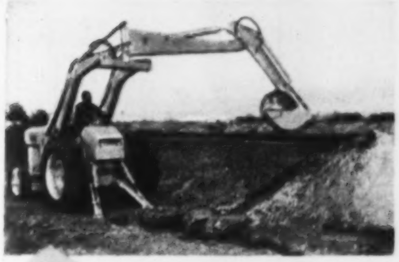
**42 hp**

**Model 303** with angle-dozer and rear-mounted backhoe provides ideal means to clean up after main-line or intermediate machines . . . keeps equipment costs relative to job.



**34 hp**

**Model 202** and backhoe — 5 sizes, 12" to 36" buckets. Swings 180°. Ideal for scattered "work and run" jobs — anywhere. Digs to depth of 13 ft.

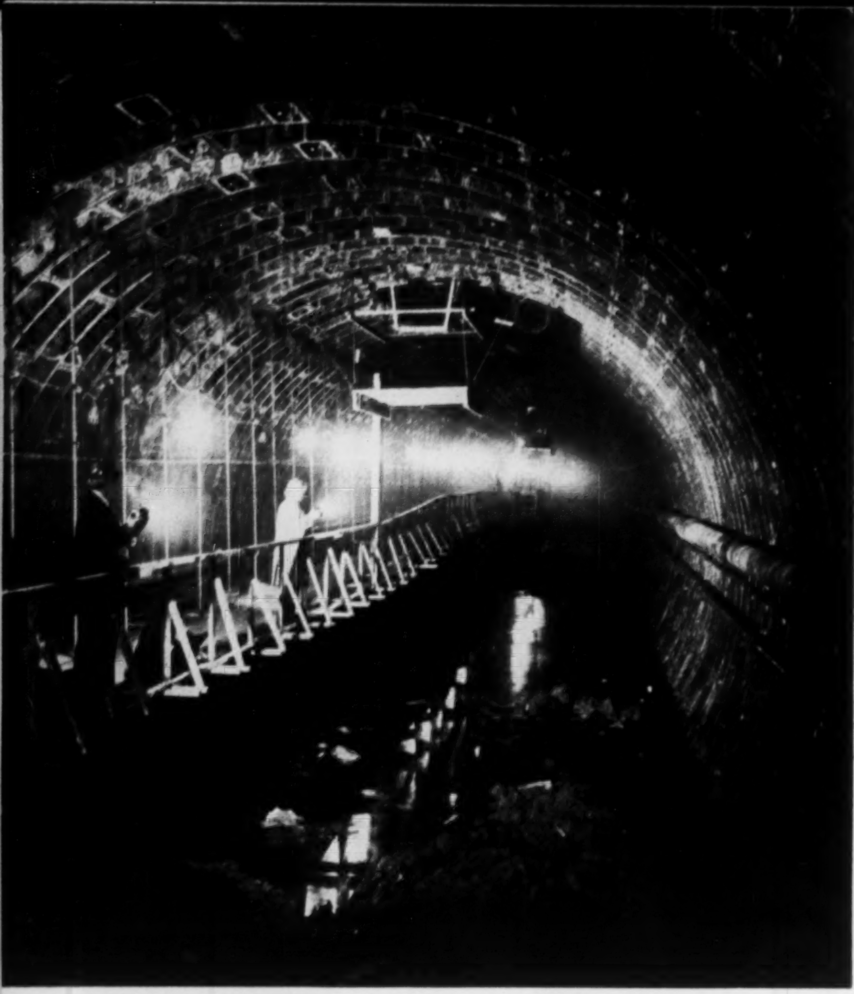


**42 hp**

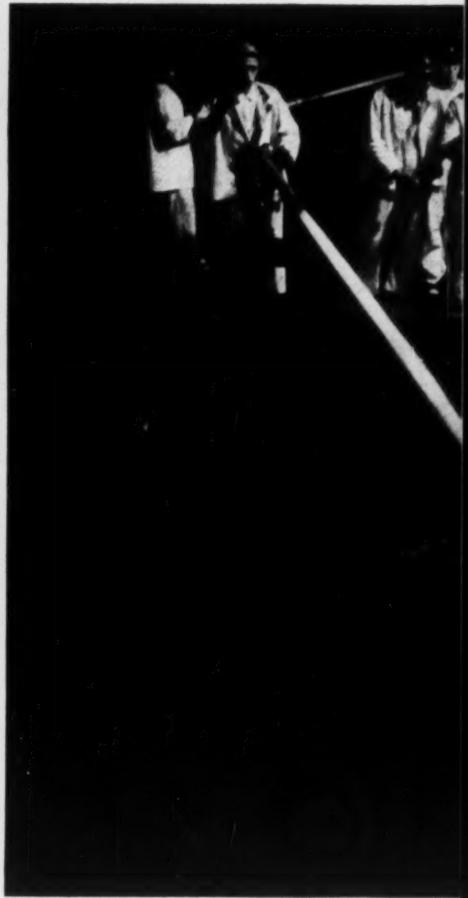
**Davis Pit Bull** features torque converter . . . "foot-shift" direction changes . . . five speeds forward, five reverse. Frequently outworks more expensive, single-purpose rigs.

**Fork Lift**

**Model 202** lifts 4000 lbs. with 10 ft. mast, has extension with 21 ft. reach for lighter loads.



**TUNNEL BOTTOM** is covered with 7 to 10 ft of mud, silt, water, and construction debris before start of the cleaning operation.



**FIVE TURRET NOZZLES** mounted on a special sled blast mud and silt into

**LEAD CALKING** is rammed into joints by pneumatic hammer.

# Muck Is Jetted Topside

Hydraulic mucking, the use of telescopic forms and coordination of work are the key factors in pushing completion of the badly needed third tube of New York's Lincoln Tunnel.

During the tunneling operation, the contractors—Mason-Johnson-MacLean—were more or less at the mercy of the uncertain sub-strata they were boring through. The ground could—and did—play hob with progress schedules. Many of the conditions encountered were licked more by dogged persistance than anything else.

But with the "holing through" on June 28, control of work progress came to rest almost entirely in the hands of the contractors and they were set to make the most of it.

Nobody—least of all M-J-M—thinks that the threat of unforeseen "bad breaks" is completely eliminated. But with placing of the last ring in the underwater tunnel, that threat was sufficiently minimized to succumb to "know-how." And know-how is a long suit with the Mason-Johnson-MacLean, among whose key personnel are men who built the Queens Midtown Tunnel, Brooklyn Battery Tunnel, Holland Tunnel, and others.

• **The problem**—After bolting the last ring—number 2,031—the big problem facing the contractor was to get the job back on schedule, and, if possible, beat the completion deadline, set for spring of 1957.

The tunneling had met with no major set-backs—even the sensational flooding of the Manhattan guide drift (ENR Feb. 2, p. 22) did little to slow the work. However, the large number of minor obstacles encountered was

suspension in a stream of 40,000 gpm. Muck flows back under sled to sump.

**FINAL CLEANING** of tunnel rings is mostly a manual operation. Joints, however, are scoured with a sandblasting machine.

# as Lincoln Tube Nears Final Stage

sufficient to delay the progress somewhat.

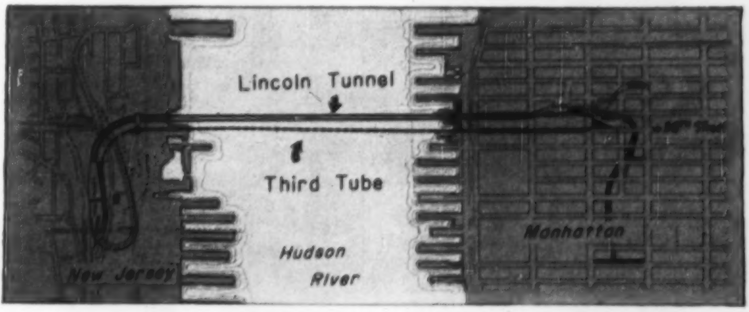
Schedule or no schedule, speed was, is, and will continue to be—of utmost importance.

In 1955, more than 21,000,000 vehicles squeezed through the two existing tubes of the Lincoln Tunnel, just north of the new facility. This year that number will be higher (ENR Jan. 19, 1956). An annual volume in excess of 30,000,000 vehicles has long since been predicted.

**• Peak load headache**—The nature of the traffic is the same as has plagued commuter railroads—heavy in one direction in the morning, in the other at night—fairly "easy" between times.

**• The solution**—Because of the traffic pattern, the addition of the third tube will increase by 50% the annual capacity of the tunnel, and double peak-hour capacity in the direction of heaviest traffic. The north tube will continue to carry westbound traffic. The new tube will carry two lanes of eastbound vehicles. The center, or present south tube will handle traffic in one of three ways: 1. Both lanes eastbound, 2. Both lanes westbound, 3. One lane each direction.

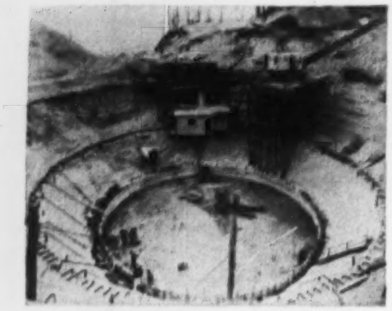
**• The job**—With completion of the spectacular compressed air work, the



HOW TO HANDLE
WET JOBS

PUMPING
STATION

City of Grand Rapids, Michigan
*Contr.: Owen-Ames-Kimball*



DRIED FAST; NO SHEETING
SILT PROBLEM OVERCOME

IN ONE MONTH from installation, the concrete base slab (4 ft thick, 71 ft diameter) was completed—deep down at 35 ft below water level. Half month more finished monolithic circular wall, 40 ft high.

Such were the speeds and savings made possible by Griffin Wellpoint equipment, plus Griffin's long-acquired "know how," which assured correct wellpoint depths, spacings and jetting methods, on this tough-to-handle job.

• Despite 4 ft layer of fine sand and silt, pre-drainage was so thorough that bulldozer could work "on bottom" feeding to crane on trestle. Excavation was open cut, with one-on-one slope. Any wonder this contractor (who had previously tried Griffin "quick-dry" service) came back for a "second helping!"

GRIFFIN
WELLPOINT CORP.
881 East 141st Street, New York 54, N. Y.
Hammond, Ind. Houston, Tex. Jacksonville, Fla.
In Canada: Construction Equipment Co., Ltd.
Toronto Montreal Halifax

contractor was faced with the more mundane but equally exacting task of interior construction.

The first job was to get rid of 25,000 cu yd of silt that lay on the cast iron bottom of the under-river portion.

This muck stretched out for 4,300 ft: at the eastern end it was 7.5 ft above the bottom flanges; at the west, it was 10.5 ft deep. It weighed 102 lb per cu ft, was too sticky to knock off a shovel, and smelled bad enough to make a fish market seem like a perfume counter. Sandhogs traditionally dislike the prospects of getting it out by usual hand means, and time—perhaps 14 weeks—could be ill afforded.

• **Contrast**—In the usual mucking operation, a small power shovel is put into the mouth of the tunnel to dig towards mid-river. If two shovels are used, they start at opposite ends and work toward each other.

With each bite the machines must swing 180° to drop the load into muck buckets that are brought up from behind on rails, and the loaded cars must be then towed or winched out of the tunnel to a rehandling point where the waste is loaded into trucks for disposal. This is slow work.

Furthermore, the power shovels cannot clean inside the ring flanges which are 14 in. deep. This leaves tremendous quantities of muck to be removed by lengthy, backbreaking hand labor. Mason-Johnson MacLean came up with an idea—an idea that got the green light from both the PA resident engineer, H. A. Druding, and the sandhogs' union.

The plan was to use hydraulic means to clean the tunnel—break up the mud with high-pressure water jets and carry it in suspension to a sump from which it would be pumped out.

The principle is not new—the adaptation is. Details were worked out by Howard L. King, consulting engineer to M-J-M. M. L. MacLean, President of MacLean-Grove and project manager for the tunnel building combine, worked with his assistant Hugh E. Cronin, resident engineer, and George Sager, general superintendent, to assemble, install and test the necessary equipment. To save time, much of this was done while the tunnel was still under air.

• **The plant**—The basic equipment needed for the mucking job comprised four pumps—two for water supply and two for discharge—and a winch-drawn sled carrying five turret mounted nozzles. Two supply pumps, one high pressure, and one low pressure, were set up on the Jersey (west) bank of the Hudson. The high pressure pump fed the nozzles, the low pressure machine supplied extra water needed to keep the mud in suspension.

The discharge pumps were mounted in series within the tunnel, one at the mid-river sump, and the other hooked into the line at a point 2,200 ft west of the sump, to act as a booster. The four pumps were manufactured by the Morris Machine Works, who according to the contractor, helped greatly in the engineering design. The high pressure supply unit was rated at 2,000 gpm at 260 ft head driven by 2,300 volt, 200 hp, 1,700 rpm motor. The low pressure volume pump was rated at 2,500 gpm at 50 ft head, driven by a 440 volt, 40 hp, 1,175 rpm motor. The discharge pumps were both heavy duty semi-steel dredgers with 300 hp, 800 rpm, 3 phase, 60 cycle, 2,300 volt motors, and capacity of 4,200 gpm against 150 ft head.

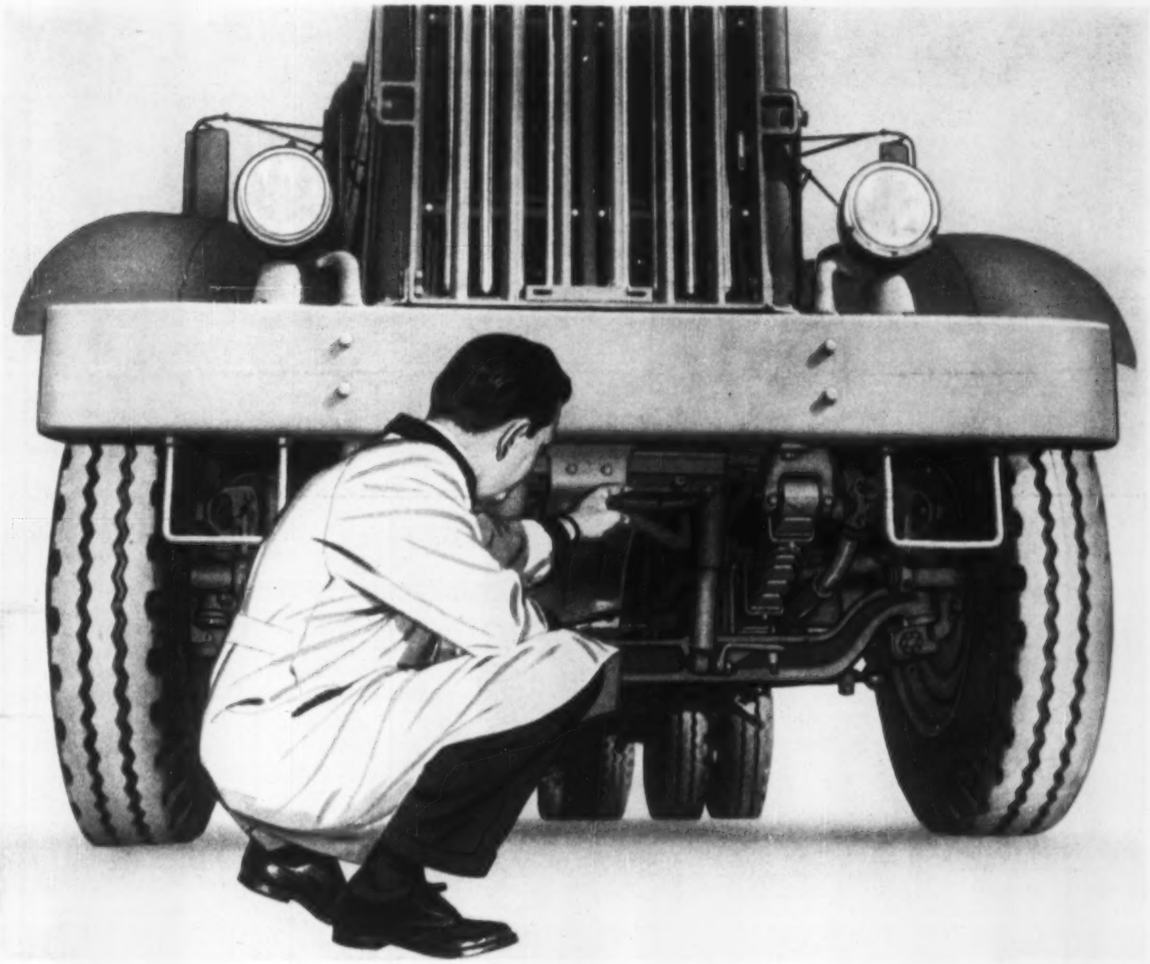
The dredge pumps were identical, except that the booster was powered by a constant speed motor while the other had a variable speed (slip ring) motor. It was this difference in the motors that gave the contractors some trouble—repeated cavitation resulted from inability to synchronize output when the sump pump was slowed down. On the whole, however, the set-up was very satisfactory.

• **Conduit lines**—Most intricate part of the system was the arrangement of supply and discharge lines.

For supply, two 10-in. pipes were run into the tunnel and down the walkway along the spring line. The high pressure pipe went the full length of the tunnel. A series of outlets along its length permitted attachment at many points of a manifold that fed the four 200-ft, 4-in. canvas hoses running to the nozzles.

The low pressure line ran only to the sump, where it crossed the tunnel to connect to the eastern part of the 12 in. standard weight pipe that had served as a low air line when the tube was under pressure. No longer needed for air, it was split at the sump and used for water. The eastern half became part of the low pressure supply line, while the western part served as the discharge line from the sump. It was into this line that the booster was hooked.

The sled carrying the nozzles was an open platform mounted on skids designed to slide on the tunnel rings, moved by a tugger. At the front of the sled were three turret mounted 2 in. nozzles, at the rear were two similarly mounted 1 in. nozzles. Nozzle pres-



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## *THEY PLANNED FOR 1956*

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Only a wooden guardrail protected motorists from a plunge into the 10-foot-deep ditch.

The Armco Pipe has been installed and the ditch hazard no longer exists. And the surrounding area has become more receptive to development.

Old steam shovel excavates ditch for 84-inch-diameter Armco Pipe.

This photo is of the same site as shown above—the house is the only unchanged landmark. The hidden Armco Pipe is still functioning efficiently.

Twenty-nine years ago, suburban Moraine City was a small Ohio community. Through it went the busy Dixie Highway, which paralleled a deep drainage ditch. The ditch caused many accidents. Motorists demanded that this traffic hazard be eliminated.

To do this, it was decided to replace the ditch with a stream enclosure of 84-inch-diameter Armco Corrugated Metal Pipe. With this solution, not only would the ditch be eliminated, but real estate development would be encouraged. The picture of this same site today proves the accuracy of this theory.

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As shown in the photo below, this 1750-foot-long Armco stream enclosure is still in excellent condition. The galvanized coating has given the Armco Pipe ample protection from erosion by sand and gravel.

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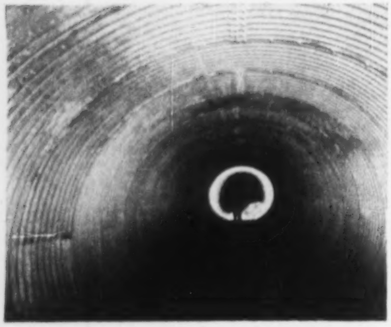


Interior of the Armco Pipe stream enclosure as it looks today. It looks good, is good—in spite of erosion problem.

**ARMCO**
**DRAINAGE STRUCTURES**

sure for all units was one hundred pounds.

**• Mucking procedure**—The sled was set up just east of the sump, headed east.

Streams from the three front nozzles were played on the mud bank, which quickly began to break up. Extra water from the low pressure line helped carry the suspended solids back down the grade under the shed and to the sump. A specially designed grizzly kept the intake from being clogged by wedges, burlap bags, other floating debris.

As the sled moved out from the sump, the two back nozzles were put into use to help the muddy water rearward.

The sled moved forward at the rate of 140 rings per 24 hour day and reached the east end of the muck pile in five working days. It was then turned around to work its way back to the sump. The return trip took only three days and just about finished the mucking in the New York side of the tube.

At the sump, the rig was passed around the pump to begin its westward trek. The booster pump had been mounted as high as possible, so it took very little dismantling to get the sled under it.

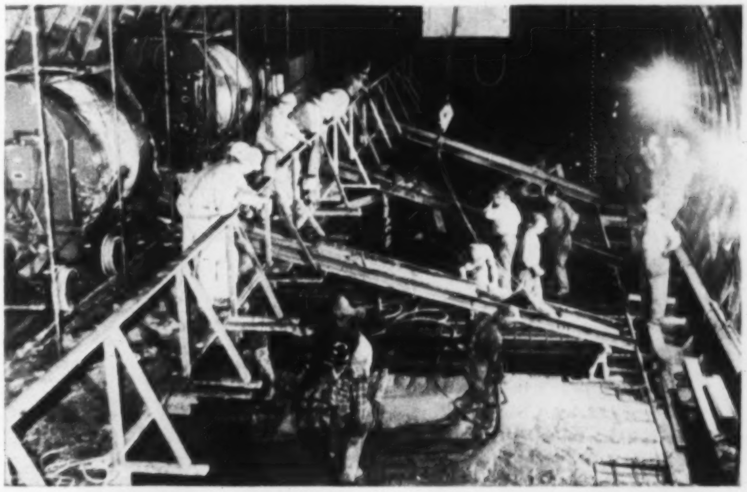
The procedure used on the east half of the tunnel was repeated in the west, with equal success. Throughout the entire operation, the granular nature of the silt lent itself well to the hydraulic mucking method. The material went into suspension easily, and there were no chunks or lumps left behind.

Less than one month after the air went off, the contractor started to dismantle the mucking plant.

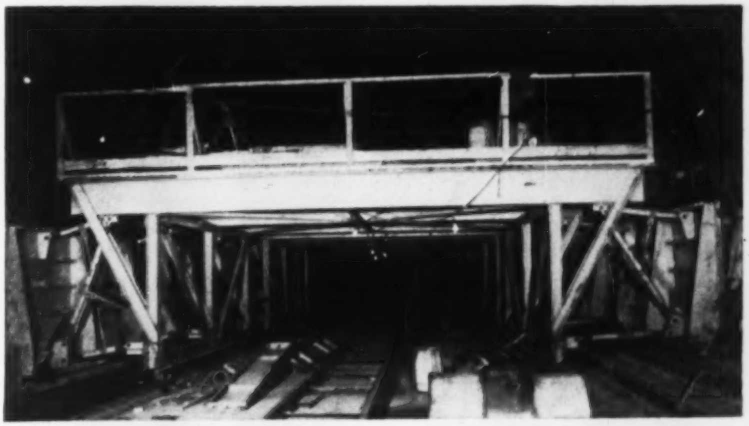
Before the mucking was finished, the contractors began final preparations for concreting the tube.

**• The concreting sequence** runs this way: invert, roadway, gutter curb, lower sidewall, upper sidewall, arch, ceiling, and sidewalk. Coordination of the concreting alone requires careful planning and speedy execution. It is made doubly complex by the need for tying in with the numerous other jobs that go along with it. The cleaning, calking, testing, tightening, wiring, plumbing, lighting, and tiling represent just some of the operations that must keep ahead of, or work in with, the concreting.

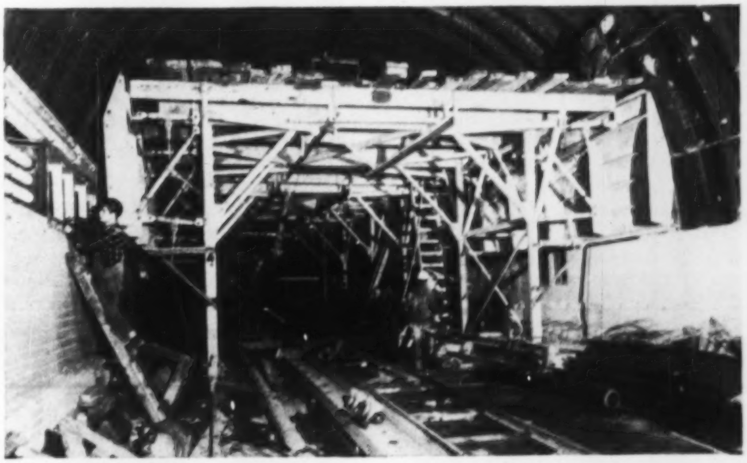
**• Cleaning and calking**—Cleaning and calking the tunnel rings is basically a routine job, but it is a very important one. The water left inside the flanges



**ROADWAY CONCRETE** is gravity-fed from agitator cars. Chutes are moved by hoist suspended from rail mounted on top rings.

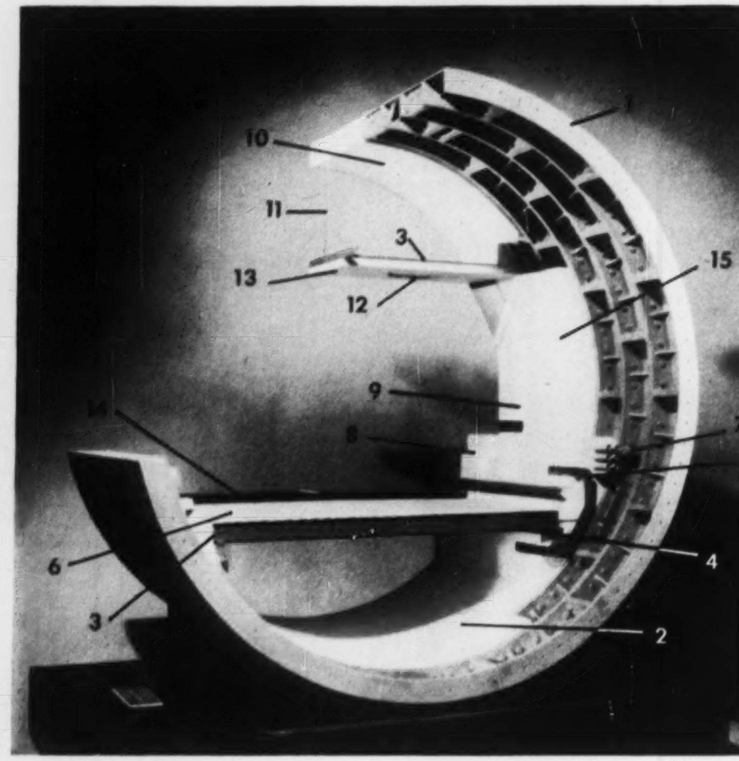


**LOWER SIDEWALL FORM** is placed for pour. Sets of steamboat ratchet jacks —2 horizontal, 1 diagonal—simplify adjustment and stripping.



**UPPER SIDEWALL FORM** works like the lower form, but differs in height and face shape. Top serves as a platform for preliminary arch work.

## . . . Lincoln Tunnel: Forms stretch out for 2,500 ft



**TUNNEL CROSS-SECTION**—1. Cast Iron tunnel segments, 2. Invert concrete, 3. Horizontal tie-rod, 4. Roadway beam, 5. Fresh air ports, 6. Roadway slab, 7. Electrical conduits, 8. Sidewalk bench, 9. Sidewall concrete, 10. Arch concrete, 11. Ceiling hangar, 12. Exhaust air port, 13. Tunnel ceiling, 14. Roadway paving, 15. Wall tie.

by the hydraulic mucking is moved downhill to the mid-river sump by crews with portable pumps. The rings are wire-brushed, both manually and with power, and the joints between them are cleaned. In the past, joint cleaning has been done with wire brushes and hand scraping tools. To expedite this phase of construction M-J-M worked with Vacu-Blast Co. of California to adapt a sand blasting machine to the work at hand. Initially, some difficulty was encountered with nozzle development, but this problem was soon licked.

The joints in the rings are being cleaned with sandblasting machines using aluminum oxide dust. Cost of the abrasive is kept to a minimum by the high rate of dust recovery made possible through vacuum attachments at the nozzles.

For calking, the contractor uses wedge shaped lead strips which are forced into the joints by pneumatic hammers.

• **Testing and tightening**—Testing and tightening of the joints is one job that cannot be hurried. Specifications require that the rings shall remain watertight for seven days after calking. If any wet spots develop, they are traced and recalked. Eventually the tube will develop some leaks, but to forestall that day, PA inspectors and the contractors are giving meticulous attention to the waterproofing.

• **The concreting starts**—As soon as a large enough section was watertight, concreting began. The 16 in. thick invert is poured first, and it takes the only unformed, gravity-placed concrete in the underwater section. All other concrete is deposited by gravity or pumped into place on or behind traveling and telescopic forms. The concrete is delivered by ready-mix trucks to the head of a 55 ft shaft on the Jersey side of the Hudson and unloaded into supply hoppers from which it is placed into agitator cars for transportation to the point of placement.

• **The forms**—In the forms and their use lies the key to speedy wrap-up of the interior construction. Travelling forms are not uncommon, nor are telescopic forms, but the size, design and the utilization of those in the third tube make them noteworthy. The forms were designed and constructed by Blaw-Knox to meet both the physical and the time requirements of the contractor, and are set up so as to permit a continuity of concreting operation. All sections of the form except the ceiling panel are 128 ft long and since every form is poured on alternate days, the completion of the interior construct on when all forms are in use, will be at a rate of 64 ft per day.

The hitch here is that before the first of the ceiling forms is put into use, the roadway forms will be half way through the tunnel. So vast is the forming operation that when properly placed for continuous pours, the front form will be 2,500 ft ahead of the rear form. For this reason, the 64 ft per day will be attained only during part of the concreting operation.

The roadway form is the first one placed, supported by the invert. Because the bottom of the completed roadway is actually the top of the fresh air duct, it must be heavily reinforced. I beams and reinforcing rods are both used. In addition, the bottom tie rods for the tunnel rings are encased by the roadbed, which is 15 in. thick. The 4½ in. pavement—not under M-J-M contract—one of the last of the tunnel installations, brings the total road thickness to 19½ in.

When the roadbed concrete has hardened sufficiently the supply car tracks and the form tracks are laid. The gutter and the curb are poured in quick succession, while simultaneous installations are made in succeeding form units. The previously assembled lower sidewall form is moved into place and adjusted by means of the steam boat rachet jacks which act as mounts for the face of the form.

While concrete is being pumped behind the face of lower sidewall form, the top of the form frame is used as a scaffold by men making upper sidewall installations of reinforcing, conduit, etc. The upper sidewall forms meanwhile are being readied for positioning.

On the day after the pour, the face of the lower form is pulled away from the green concrete by the ratchet jacks and the rig is moved ahead for the next pour. The upper sidewall form follows immediately behind and the process is repeated, with the top of the upper form being used as a scaffold for preparation of the arch.

The forming of the arch is handled the same as the lower and upper sidewalls, but in the concreting there is a difference. The contour of the arch form leaves only two inches between its face and the flanges of the upper tunnel rings. With so little clearance, it is necessary to inject the

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concrete at several points to obtain a smooth and uniform pour. The concrete is pumped through 8 in. pipes set at 5-ft-4-in. on centers in rows 10 ft apart on the underside of the form.

Prior to placement of the lower sidewall forms, the upper ring tie rods are placed and tensioned. This is a slow, difficult job. Each tie rod bracket must be job fabricated to connect to the tunnel rings at exactly the right spot. Since the rods are 1⅜ in. in diameter and must be completely encased in the five inch ceiling slab, there is little or no tolerance in their horizontal position.

In the ceiling form and its use is the most radical departure from the ordinary. The form is more than a city block long—384 ft—and it is telescopic. It is so designed that, quickly and with little effort, the section at the rear can be collapsed, advanced through the forms ahead, and repositioned forward.

In the building of other tunnels in the New York area it was the practice to delay concreting the ceiling slab until all other concreting operations passed the half way mark. It was then possible to erect two sets of forms—one at the end and the other at the middle of the tunnel. By alternating a single crew to work both forms in the same direction, it was possible to maintain steady progress.

The telescopic feature of the new forms permits a continuity of work not previously possible, and greatly simplifies coordination of setting the ceiling tile. Of the more than 400,000 4½x4¼-in. ceramic tiles that will line the complete tunnel, more than one third go into the ceiling—and they are put in place before the ceiling slab is poured.

It works this way: heavy paper is rolled out on top of the ceiling form, which has been set to grade, and an adhesive is applied to its upper side. One by one the tiles are laid face down on the glue, with blank spaces left for light fixtures and other openings. As each form section is tiled, the setters move forward to the next, while reinforcing wire mesh, conduits, exhaust air-ports and hanger rods are installed on the readied section prior to placing concrete on top of tile.

The sidewalk forms follow: behind them the walls are tiled.

Like a circus juggler who starts with one plate in the air then adds another and another. M-J-M started with one pour—the invert—then added another and another. When the invert concrete reaches mid-tunnel, the contractor will be juggling concrete to nine sets of forms. As each form reaches the eastern end of the tunnel, it will be dismantled and the pouring schedule will be reduced but not slowed.

# Berger Transit narrows problems on world's widest vehicular tunnel

Deflections. Angles. Curves. Each construction job contributes its share. But the 13½ million dollar tunnel section of Boston's new J. F. Fitzgerald Expressway had them in spectacular abundance. And when V. Barletta Co. of Roslindale, Mass., was awarded this big contract, they knew that the instrument needed to see them through the job would have to be tops in accuracy and dependability. That's why they chose the BERGER 6¼" Bronze Transit.

Here's an idea of some of the problems they met:

On the approach to the slab area, some 20,000 yards of concrete—over 90 separate pours—were held to within 1/100th of a foot.

Where the approach goes underground, the base lines of the steel structure are on a series of curves. These base lines—and all points on both sides of the structure—were run 15 to 20 times to assure absolute accuracy. Anchor bolts were set within 1/16". Pre-cut steel beams had to fit exactly. They did.

Problems of laying out, alignment, elevation, leveling—the BERGER Transit was given a complete workout, day in and day out.

Said Barletta Co. engineers: "It does the job—and then some. Graduations stand out clearly for easy reading. Telescope focuses quickly over long and short distances—from 100 to 500 feet in only half a screw turn. Easy to center over a point from 15 to 20 ft. height. No problem picking up targets—even at 1200 feet."

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CONCRETE
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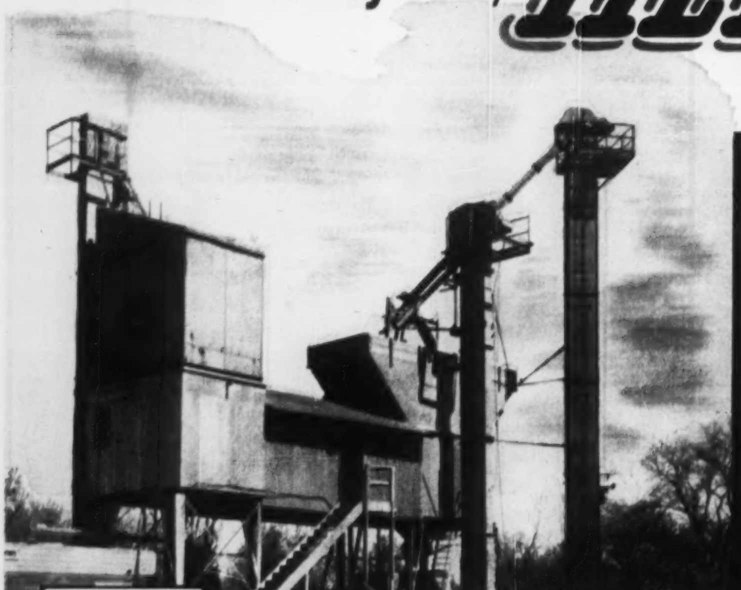
Tony Stepher, secretary-treasurer Mutual Contracting Co., Belmar—"From the performance of our first—we have just purchased our second Heltzel plant—and when it comes time for the third—that, too, would be all Heltzel."

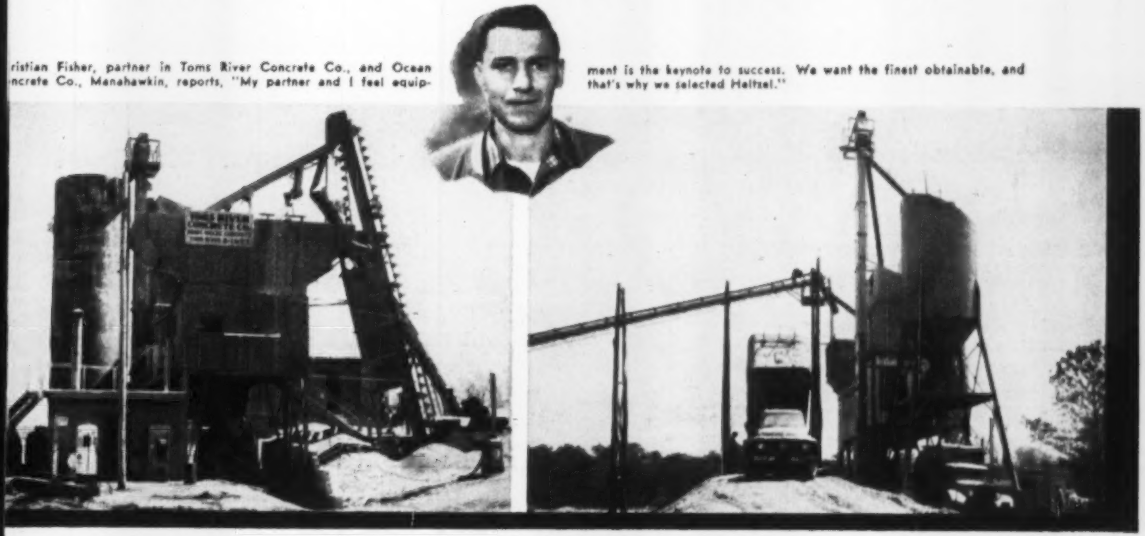
# In New Jersey too, HELTZEL



Mr. Walter Cortier, owner Allied Transit Mix Corp., Freehold—"We are thoroughly satisfied with the Heltzel plant! We wish to further state that recently a nationally known firm of consulting engineers made a plant survey and reported that it is one of the best layed out plants they surveyed in the last few years."

Ted Ferrell, manager Monmouth Lumber and Concrete, Deal—"We operate other makes, but this new Heltzel has them all beat for speed and accuracy. We are Batchmaster* boosters from now on."

Says Mr. Harold Collins of Collins Brothers, Inc., Keansburg—"We're extremely satisfied with our Heltzel Batchmaster*. I've just installed my second plant and if it's anything like the first, I'll be more than happy."



ristian Fisher, partner in Toms River Concrete Co., and Ocean ncrete Co., Manahawkin, reports, "My partner and I feel equipment is the keynote to success. We want the finest obtainable, and that's why we selected Heltzel."

# stands out!

## The story's the same wherever you go. Men who know concrete prefer HELTZEL BATCHMASTER PLANTS

The eight Heltzel Batchmaster Plants pictured on these pages are grouped within a few miles of each other along the North Jersey Shore, furnishing contractors of that area with all their concrete requirements. This concentration of Heltzel equipment is typical throughout the nation, for these fast, accurate, profit-producing plants have a universal appeal for those who know concrete.

There are dozens more of these plants in New Jersey, and hundreds of them spread throughout the 48 states, each providing its owner with efficient, trouble-free batching.

There's a reason for this leadership. Heltzel has been building concrete handling, forming and spreading equipment for almost 50 years. They know the industry and its needs. They have the background necessary to assure the finest in practical engineering, dependable products and quick service.

When next you're in the market for batching equipment, remember it costs no more to have the finest — that's a Heltzel Batchmaster* Plant!

At Wayside, New Jersey, Duncan Thacker, owner of Campbell Concrete Co., says, "We looked them all over, and talked with a lot of people before we made our selection. I'd say we have the finest equipment possible in our new Heltzel Batchmaster*".

*T.M.

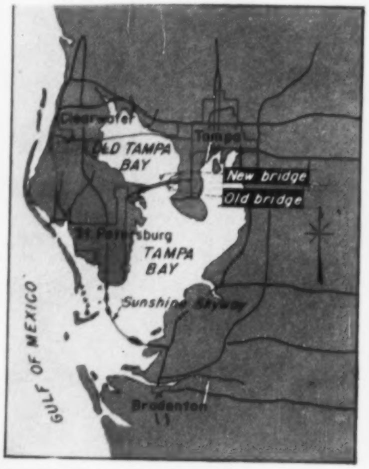
**THE HELTZEL STEEL FORM AND IRON COMPANY**

89807 THOMAS ROAD

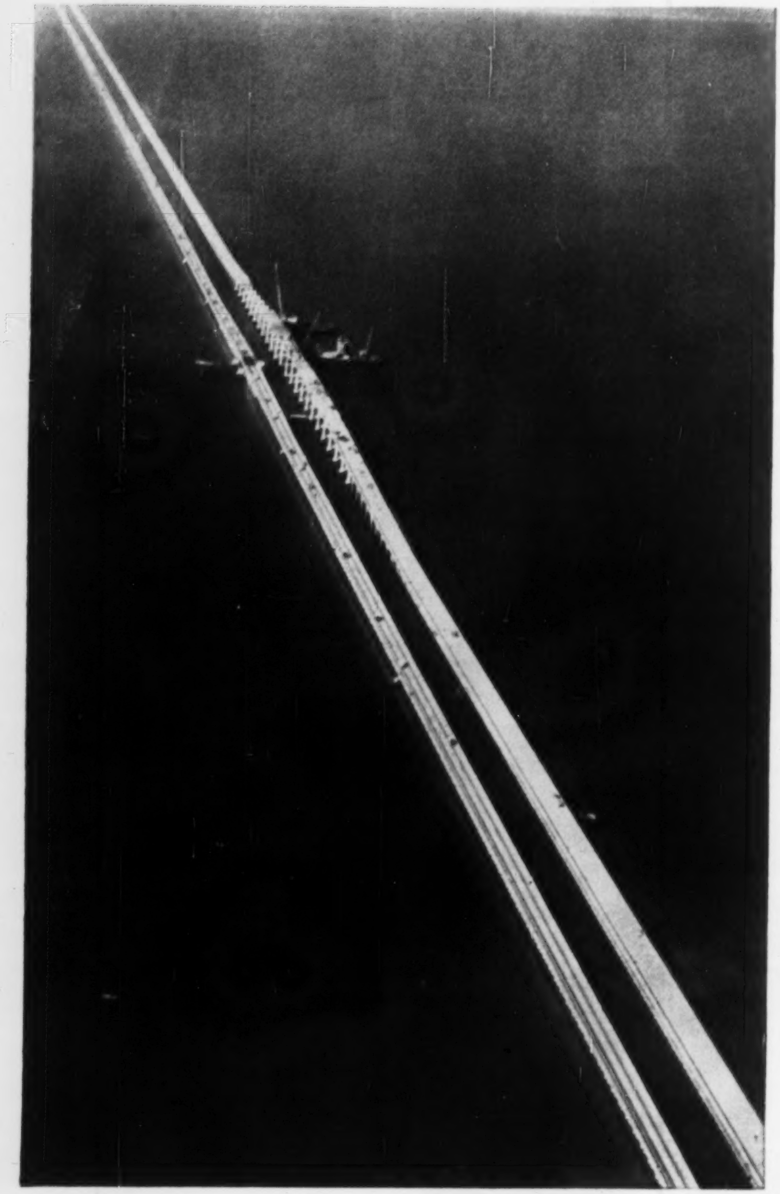
WARREN, OHIO

10019

**Rebuilding a condemned 33-year-old bridge and constructing a parallel prestressed structure, Florida's highway engineers achieved double capacity across 2½ miles of water.**



**PARALLEL BRIDGES** serve as main link between Tampa and St. Petersburg.



# Four Lane

**W. E. Dean**
**Bridge Engineer**
**State Road Department**
**Tallahassee, Fla.**

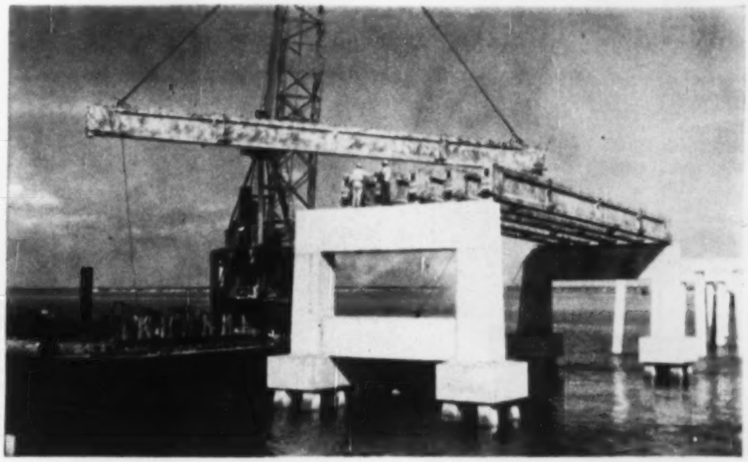
A new four-lane project crossing Florida's Old Tampa Bay between Tampa and St. Petersburg offers an interesting contrast in trestle bridge construction. Although the project is new, the crossing is old. Originally constructed as a two-lane bridge, it was opened to traffic in 1923 as the "Gandy Bridge". The present project consisted of rehabilitating the old structure and constructing a parallel two-lane bridge to give a four-lane crossing.

The bay at this point is about four miles wide. The crossing consists of about 1½ miles of fill extending out from the shores and approximately 13,700 ft of bridge.

The old bridge is made up of 563 24-ft spans (totalling 13,512 ft) of reinforced concrete T-beam construction resting on bents of 16-in. concrete piles. A navigation channel is crossed by a double-leaf bascule span.

**• New bridge omits draw span**—The new bridge is constructed 80 ft north of the old. It is made up of 252 48-ft spans (totalling 12,096 ft), 20 72-ft spans (totalling 1,440 ft), and one 3-span continuous unit at the channel with span lengths of 74, 86.5, and 74 ft. The most distinctive difference from the old bridge is at the channel where there is a fixed span with a 45-ft clearance rather than a draw span. The cost for providing the additional height at this point was al-

**PRESTRESSING** 48-ft beams, workmen take up on 1⅛-in. steel rods.



**PRECAST, PRESTRESSED BEAM,** 72 ft long, is swung into place for long-span section of new bridge. Clusters of concrete piles support the piers.

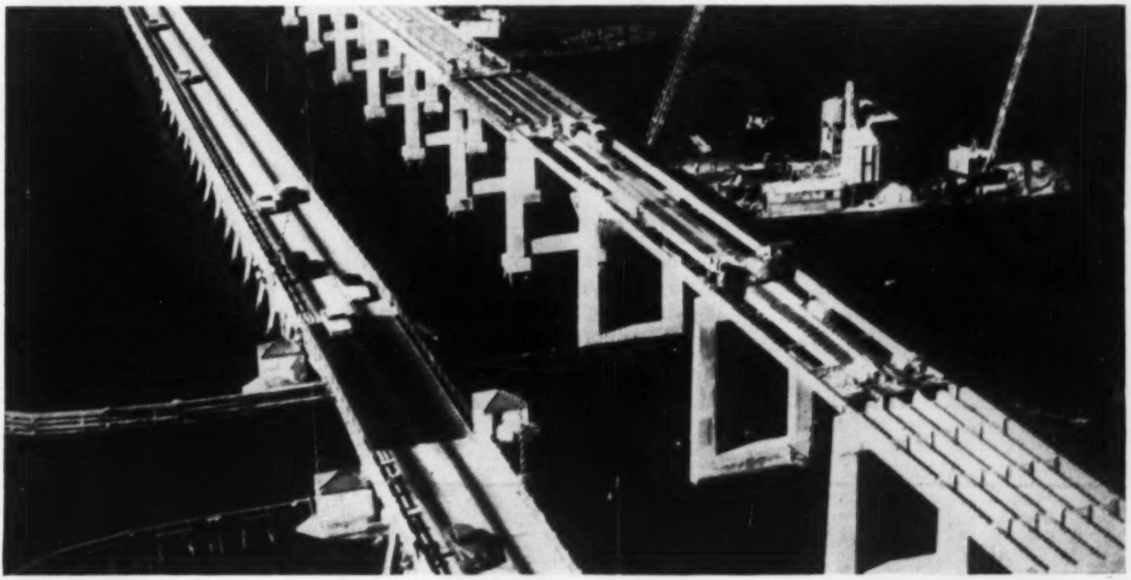
# Across Tampa Bay at Low Cost

most the same as for a draw span 25 ft lower. The fixed span offers complete separation of highway and waterway traffic; eliminates costly draw bridge operation; and, in the event of repairs on the old draw bridge, traffic can use the two lanes on the new.

The new bridge is made up principally of the 252 48-ft spans with a roadway elevation of 12 ft. Construction consists of precast-prestressed concrete beams with a cast-in-place deck founded on bents of 20-in.-sq composite piles. The 48-ft spans are continued on the grades approaching the chanel to a point where the slenderness ratio of the 20-in. piles required a more rigid substructure. From this point forward, on either side of the channel, are located the 72-ft spans. These spans are also of the precast-prestressed simple beam type supported on concrete piers. For shallow depth and speed of erection, the three-span continuous unit at the channel is designed of I beam construction.

**• Old bridge condemned, rebuilt—** The old structure was built under a franchise issued to a private company and was operated as a privately owned toll bridge for 20 years. In 1943 it was acquired by the state in a condemnation action. The bridge was doing a lucrative toll business and the condemnation proceeding was bitterly contested, but perhaps the original ownership ended at a fortunate time for the owners. The trestle spans of reinforced concrete had reached a state of depreciation almost incredible for a bridge still in service under dense and heavy traffic.

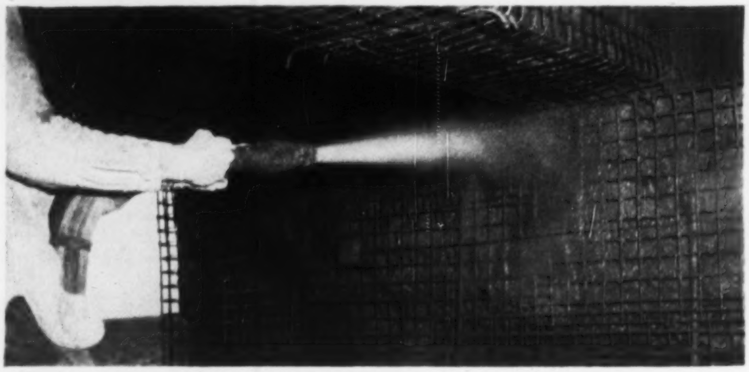
In reinforced concrete construction

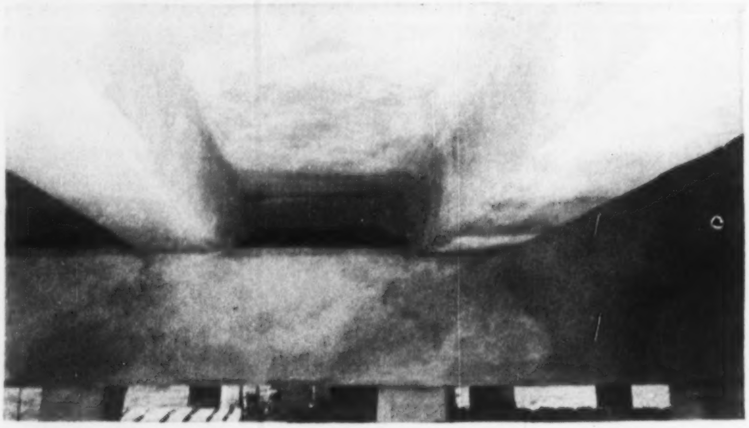


**AT CHANNEL,** new crossing (right) relies on fixed 3-span structure. Old crossing has double-leaf bascule bridge.

the old bridge might have been considered an example of what not to do. Among old construction men in the area there were many tales of hundreds of barrels of cement "saved." The old concrete had apparently been lean, offering poor protection against salt-laden spray and atmosphere. Such protection as even the concrete might have afforded had been largely nullified by the builder's evident practice of throwing reinforcing in the forms without blocking off the surface for coverage. On many girders the entire covering of concrete had been stripped from the bottom bars leaving them hanging by their end hooks. Soffits between beams had all reinforcing exposed, and piles and caps in many cases had lost up to one third of their original concrete section by spalling and disintegration.

SPALLED CONCRETE was removed from badly eroded old bridge.


FRESH CONCRETE was sprayed on wire mesh of restored members.


COMPLETED JOB revealed the transformation of an old bridge to a new one.

Bridge maintenance began as soon as the old structure was acquired by the state. Spalled concrete was removed, new reinforcing welded in where needed and the whole underside coated with a heavy rust-inhibitive grease. These measures only retarded deterioration. More permanent methods were necessary if the bridge was to be kept in continual service as the 14,000 vehicles per day crossing it demanded.

In Florida, as elsewhere, the need for modern highway facilities exceeds the state's ability to pay for them, and the appropriation of funds to projects is not an exclusive prerogative of the engineering department. The depreciation of the old bridge was mostly on the underside—out of sight of the public including road commissioners and policy-making executives. Use of a million or more dollars to repair these alleged faults that were hidden from general view was something for which authority had to be wheedled. Another complication: The depreciation was of such major nature that none of the personnel in the bridge division had the necessary experience to prescribe a cure.

**• Concrete is sprayed on**—In 1950 authorization was obtained for an experimental project of 10 spans to be restored. Work consisted of a thorough cleaning of the entire underside of the bridge by chipping hammers, sand blasting and washing; repairing and replacing seriously corroded bars; applying wire mesh over all areas and building back to the original surfaces with pneumatically-applied mortar. In some cases the depth of the new mortar had to be as much as 6 in. and required successive applications on several layers of mesh. The 10-span project afforded an opportunity to test various construction techniques as well as to evaluate restoration by the proposed methods.

Cost of the initial ten-span project was about $23,000 or close to $100 per lin ft of bridge. Results were satisfactory enough to warrant continuation of the work by the same general methods.

Since 1951, 553 spans have been restored by stage construction in three contracts. Total cost of restoration has been about $1.1 million or an average of $81 per ft of bridge. The oldest of these restored sections has now been in place more than 5 years with no visible change other than minor hair cracks. It appears that the useful service life of the old bridge has been extended by at least 25 years, and that the funds expended for restoration will prove a sound investment.

**• Spans doubled for new bridge**—Traffic on the old structure having reached a near-intolerable density, planning

# *No "Cure-All," but...*

## *Salinas, California, finds a single grade of Bitumuls® solves five paving maintenance problems*

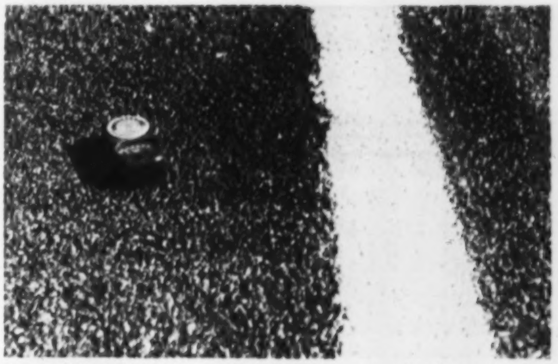
HERE'S A SITUATION common to most growing cities: annexation of outlying residential developments has vastly expanded the street maintenance job *without* materially increasing available funds. Annexation has not only added to the street mileage, but has "contributed" many sub-standard pavements to the street system, thus adding to the complexity of the job.

In an effort to solve this problem, these three Salinas men most directly concerned have worked together: Thomas A. Dunne, Director of Public Service; his assistant, Al Rossi; and Harry Adams, Maintenance Supt. Their search for simplicity and standardization led them to look for a versatile asphalt material that would do many jobs. They found it in Bitumuls SS-1, an asphalt emulsion that can be handled and used without heating, in small quantities or large.

Now, stored in a single 25,000-gallon tank, Bitumuls SS-1 is used for: Patching, Tack Coats, Prime, Seal Coats & Surface Treatments, and for Base Stabilization. In addition, Salinas City Forces can also use this same grade of Bitumuls for the new Slurry Sealing; and—at high dilution—for dust-laying on unpaved, outlying roads. All of these jobs can be done with existing equipment: a grader, a "Pulvimixer", a water wagon, two distributors, and a roller.

The obvious economies resulting from the use of this one material for all these jobs merit investigation by paving maintenance men everywhere, regardless of the size of their community.

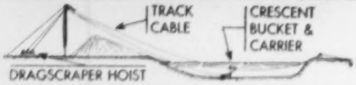
There's a Bitumuls man near you who can supply details. *Call him, today, or write:* **American Bitumuls & Asphalt Co., 200 Bush St., San Francisco 20, Calif.**



(Top), "PULVIMIXER" reworks old pavement that has been scarified and bladed in restabilization operation. Distributor applies Bitumuls at ¾ gal./sq. yd. per inch of depth. (Center), DISTRIBUTOR applies prime on a waterbound base, using Bitumuls SS-1 diluted (2 parts SS-1 to 1 part water) at 0.3 gal./sq. yd. of dilution. (Bottom), HERE'S A CLOSE-UP of the finished texture of a Bitumuls SS-1 Seal Coat pavement.

(Right), SALES ENGINEER Bob Ridell, far left, of American Bitumuls & Asphalt Co., discusses plans with Tom Dunne, Director of Public Service for Salinas, and his assistants. At far right is a partial view of the 25,000 gal. storage tank. (Below), EVEN SCHOOL YARDS are given stabilized bases with Bitumuls SS-1.

HAUL IN MORE PAYLOADS WITH THE SAUERMAN METHOD



*Sauerman Track Cable Method for digging and delivery to high pile from deep water.*

*DragScraper Machine equipped with movable anchor conveys material to top of pile from 50 ft. under water.*

*Operator tensions track cable to lift bucket off bank. Gravity returns it to digging point 400 ft. away.*

**DIG AND CONVEY**
***from steep hills...***
***over rough terrain...***
***on marshy ground...***
***in deep water***

**Sauerman Track Cable DragScraper Machines operate where wheeled equipment cannot go and crawlers can't travel without the nuisance of mats. They are especially suited for spans up to 1000 ft. or more and where material has to be placed on a high pile or embankment.**

**Crescent Buckets up to 15 cu. yds. haul at ground level, dump when lifted and are quickly returned by gravity to the excavation. This fast operating cycle boosts output and lowers costs.**

•

***Ask for details about the Sauerman Method in connection with your operation. Request Catalog A.***

**SAUERMAN BROS., Inc.** 632 S. 28th STREET BELLWOOD, ILLINOIS

## Analysis of Costs for Gandy Bridge

| | | |
|---|---|---|
| 252 | 48-Ft. Prestressed Spans (12,096 ft) | $1,721,987 |
| 20 | 72-Ft. Prestressed Spans (1,440 ft with 22 Pedestal Piers) | 512,423 |
| | Channel Spans 74—86.5—74 ft (234.5 ft with 2 Channel Piers) | 114,092 |
| | Navigation Fenders | 20,279 |
| | Approach Slabs and Sidewalks at Bridge Ends | 4,634 |
| | Navigation Lights | 10,000 |
| | Roadway Lights | 75,000 |
| | Fishing Walks—7,946 Lin Ft | 119,190 |
| | Repair Bents in Old Bridge | 22,609 |
| | | $ 2,600,214 |

| | | | |
|---|---|---|---|
| 48 ft Spans | 12,096 Lin Ft | @ $142.36 | $ 4.75 per sq ft |
| 72 ft Spans | 1,440 Lin Ft | @ $355.85 | $11.86 per sq ft |
| Channel Spans | 234.5 Lin Ft | @ $486.53 | $16.22 per sq ft |

a near-intolerable density, planning for an additional two-lane structure was commenced in 1954. Span lengths in the new trestle were largely determined by the 24-ft spans of the old. It was considered advisable to keep new bents directly opposite old ones to minimize waterway obstruction. The 24-ft span of the old bridge was too short for economical construction by any method in current use. Doubling this span to 48 ft gave a length that was considered economical (using either reinforced cast-in-place T-beams or precast-prestressed beams with a cast-in-place deck), and the new bents could be placed opposite every second old bent.

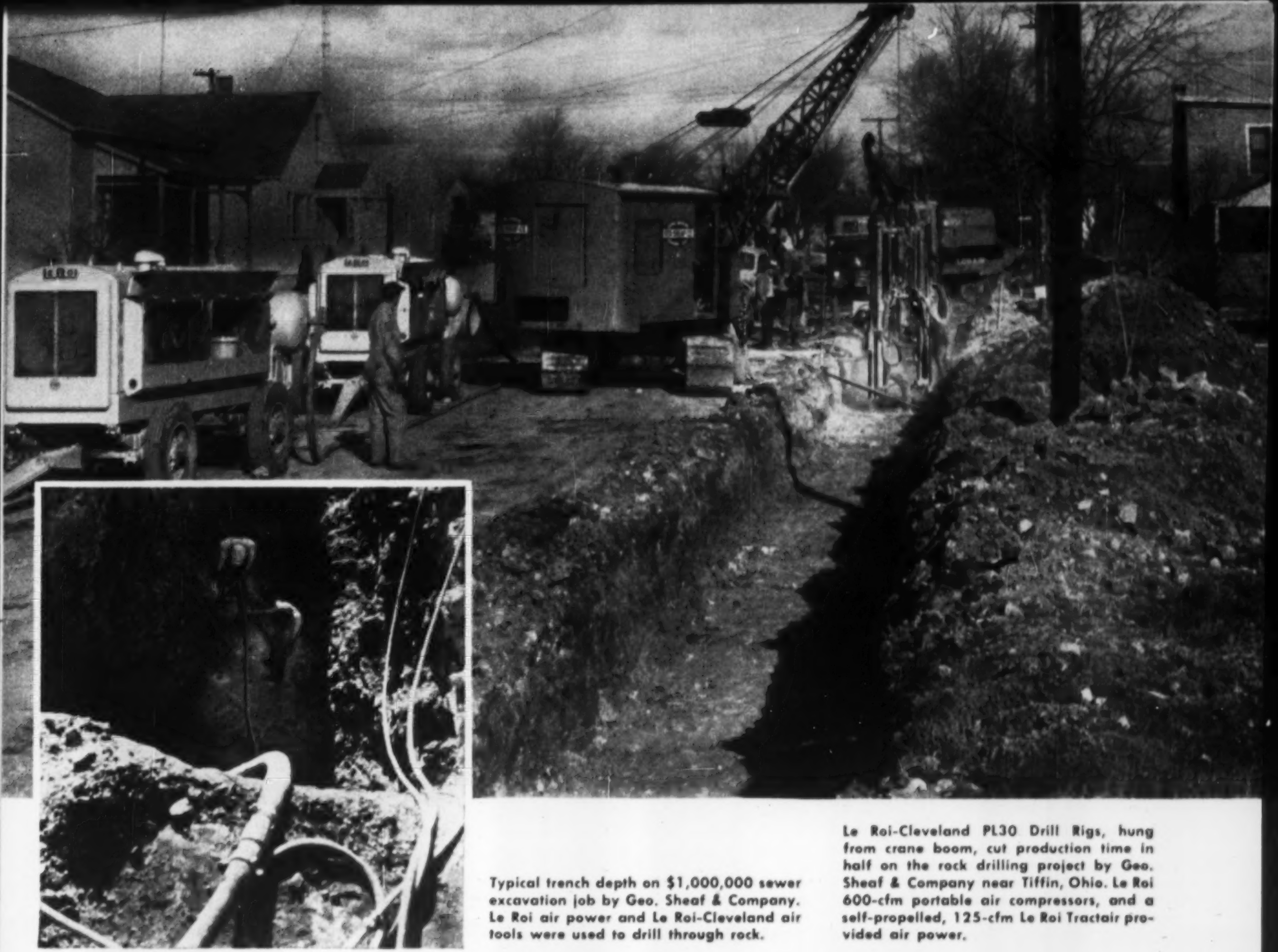
On the grades approaching the channel span, at the point on either side where continuation of the 48-ft spans on pile bents became impractical, the span length was increased to 72 ft. Here, the substructure changed to piers founded on clusters of concrete piles cut off at elevation 4 ft. The bases of the concrete piers were placed on the clusters at elevation 1.5 ft making it unnecessary to unwater. The 72-ft span length also allowed piers to be placed opposite bents in the old bridge. This span length was considered practical for construction either as a simply supported I beam composite type, or with precast-prestressed concrete beams and a cast-in-place deck.

**• Clearances set dimensions**—At the channel span, clearance requirements allowed little discretion in construction types. Horizontally, the new structure had to provide the same 86.5 ft span as the old. Vertical clearance of 45 ft above mean high water was also a requirement. To minimize approach grades a shallow depth of structure was desired.

These requirements were best met by a 3-span structure of continuous I-beam construction with side spans of 74 ft and a center span of 86.5 ft No other type of construction was considered. To provide stability against possible collisions from ships, the two piers adjacent to the channel were constructed in open cofferdams with pile-supported concrete bases at a depth of 25 ft. These foundations were the only ones on the job which required unwatering.

Plans were prepared and offered to bidders with the following alternate superstructure types permitted: For the 48-ft spans (1) reinforced concrete T-beams cast-in-place or (2) precast-prestressed concrete beams with cast-in-place deck. For the 72-ft spans (1) I-beam, composite type or (2) precast-prestressed concrete beams with cast-in-place deck. The substructure remained substantially the same with all types.

**• Prestressed design bid low**—The low bid offered was based on constructing both the 48-ft and 72-ft spans with precast-prestressed beams. Beams were cast in metal forms on concrete-floored pallets. Stressing was performed by post-tensioning high-strength steel rods, 1⅛ in. in diameter at 100,000 psi. Concrete was a mix of 6½ bags of type 1 cement, Florida sand and crushed lime rock aggregates with a retarding, densifying admixture. This mix was designed to provide a compressive strength of 5,000 psi at 28 days. Average 28-day cylinders showed breaks generally above 5,500 psi. Stressing of beams was permitted at a concrete age of 5 days provided cylinder strength at the time was at least 3,600 psi. After stressing, the bars were pressure grouted, completely sealing the ducts and pro-



Typical trench depth on $1,000,000 sewer excavation job by Geo. Sheaf & Company. Le Roi air power and Le Roi-Cleveland air tools were used to drill through rock.

Le Roi-Cleveland PL30 Drill Rigs, hung from crane boom, cut production time in half on the rock drilling project by Geo. Sheaf & Company near Tiffin, Ohio. Le Roi 600-cfm portable air compressors, and a self-propelled, 125-cfm Le Roi Tractair provided air power.

# Rock-Drill Rig on Sewer Job Speeds Production 50%

## Contractor uses Le Roi-Cleveland Air Tools to shoot and pull rock, often 18 feet deep, with one drilling.

The right air tools made quite a difference on a $1,000,000 sewer excavation near Tiffin, Ohio. Joseph Parker, General Superintendent of Geo. Sheaf & Company, Columbus, Ohio, states, "In nearly seven months of service in hard limestone, our Le Roi compressors and Le Roi-Cleveland Rock Drills had no down time, while in continuous operation 8 to 16 hours per day. They have performed to our utmost satisfaction. By using Le Roi-Cleveland PL30 Drill Rigs, we lowered our drilling costs and speeded production by 50 per cent."

**Flexibility of special drill rig** was a major factor in job speed-up. The Le Roi-Cleveland PL30 Drill Rigs provided unusual flexibility and ease of operation. This specially-designed rig, developed for rock work on pipeline projects, allowed the contractor to obtain proper drilling patterns for safe blasting in residential areas. Thus he cut construction time in half because he could shoot and pull the rock with only one drilling.

**The Contractor standardized on Le Roi-Cleveland Air Tools** using two PL30 Drill Rigs, two Model 52 Breakers, and two H10B Sinker Drills, plus hose, drill steel, and rock drill bits.

**Le Roi air power** helped speed up this project. Two Le Roi 600-cfm portable air compressors, and one self-propelled Le Roi Tractair (a combination 42-hp. wheel tractor and 125-cfm air compressor) were used.

**This combination** of Le Roi air power and Le Roi-Cleveland air tools gave the contractor exceptional drilling economies, including manpower savings, less upkeep, and more footage per shift.

**LE ROI** Division of Westinghouse Air Brake Co., Milwaukee 1, Wisconsin, manufacturers of Cleveland air tools, Tractair, portable and stationary air compressors, and heavy-duty industrial engines. Write us for information on any of these products.

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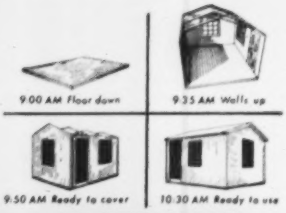

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**ECONOMY Construction Buildings are available in many sizes to satisfy any space requirements. Three buildings in picture L to R 14x33' ($1034.00), 14x26' ($818.00), 10x12' ($347.30) F.O.B. West Chicago, Illinois.**

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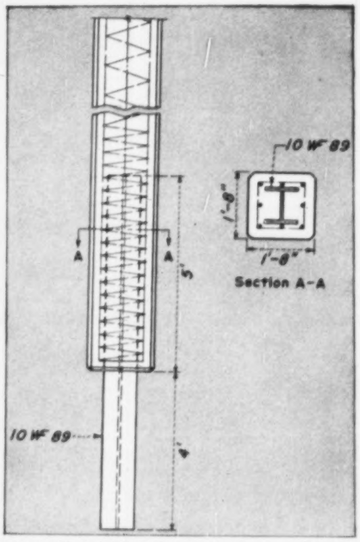
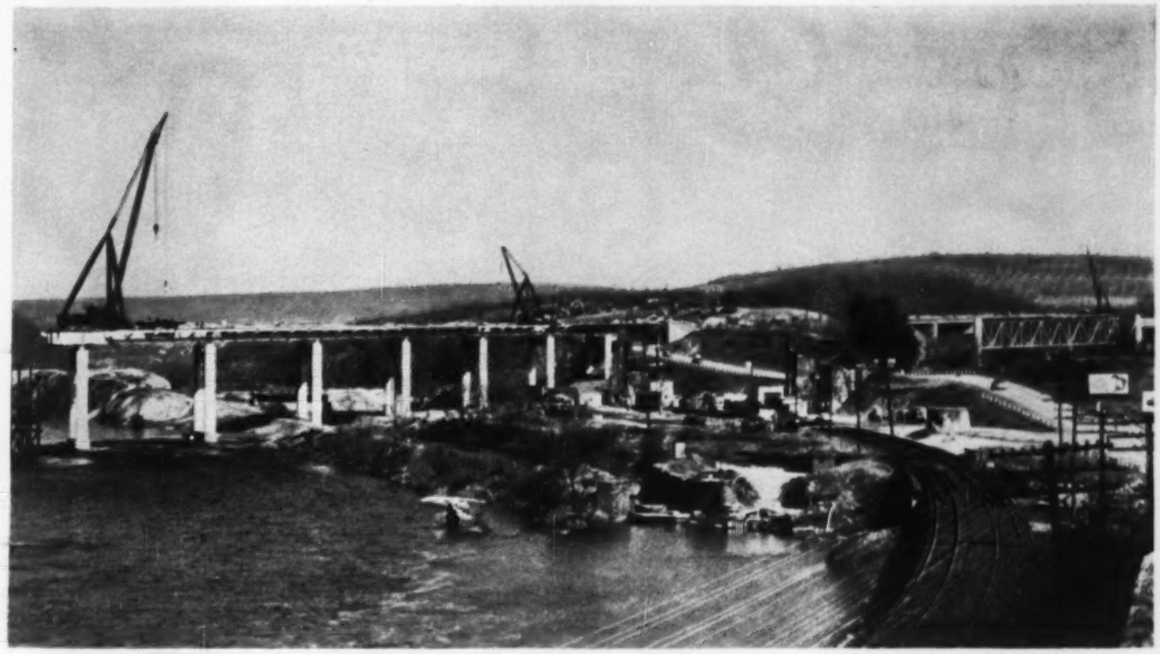


**COMPOSITE PILES for heavy duty in rock have 4-ft H-pile tip protruding.**

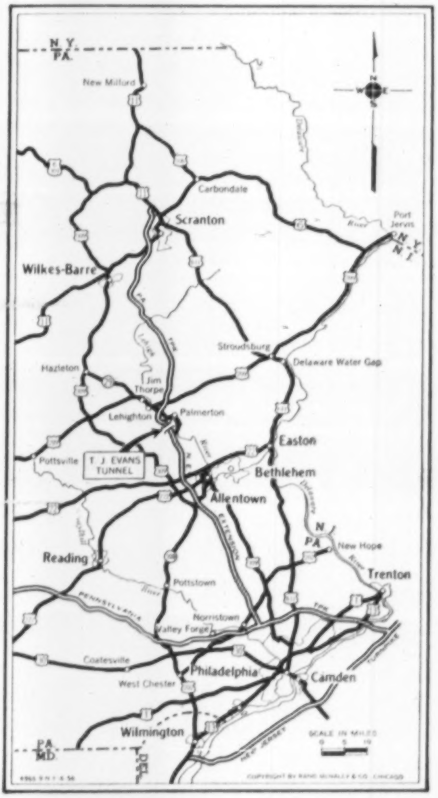
viding bond to relieve the anchorages of subsequent stress fluctuations in the steel due to passage of live loads.

**• Special piles used**—The concrete piles, used as supports for the trestle bents and for all piers except the two immediately adjacent to the channel, were developed especially for this project. Foundation material for the entire crossing is sedimentary lime rock overlain by sand and mud. The rock is of variable hardness, and its depth below the bottom varied from 2 or 3 ft to as much as 40 ft. This depth variation was sporadic with numerous crevices, potholes, ledges and irregular patterns. In such locations it has been common Florida practice to use composite piles consisting of a concrete section from which a steel H-pile tip protrudes about 6 ft. On a preliminary test-pile contract it was found that there were many rock layers, which ordinary H-pile sections would not penetrate. By continued trial it was found that with 1-in. pile flanges and a 4-ft section protruding, piles could generally be driven to a satisfactory penetration. This resulted in the use of a 20-in.-sq concrete pile with a 10-in. 80-lb section projecting 4 ft.

The entire new bridge project (including the spans previously described, navigation appurtenances, roadway lighting, 7,946 lin ft of fishing lalks and repairs to eight bents in the old bridge) was bid at $2.6 million. The cost of the 48-ft trestle spans at $4.75 per sq ft of completed bridge indicates the economies that can be realized on a large project of this type by precasting, prestressing, and simplifying details wherever possible.



# Turnpike Leaps the Lehigh



N. Y.
PA.
New Milford
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Delaware
Carbondale
Scranton
Port Jervis
River
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N. J.
Wilkes-Barre
PA
TPK
Lehigh
Stroudsburg
Delaware Water Gap
Hazleton
Jim Thorpe
Lehighton
Palmerton
River
N. E.
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Two hours to Scranton! That's good news to Philadelphia area motorists, long accustomed to a tedious, time-consuming drive to Pocono Mountain resorts and Scranton-Wilkes-Barre industrial centers. But soon, with completion of the 110-mile Northeastern Extension of the Pennsylvania Turnpike, driving time will be halved or better.

The route of the extension carries it over and under many a crossing road and railroad right-of-way, and over numerous rivers. Bethlehem had a hand in quite a few of the required bridges, including the structures that vault the Lehigh River and Pohopoco Creek in two giant steps. The truss span, at right above, extends 920 ft over the Pohopoco. After a 700-ft stretch on land, continuous girders carry the broad highway another 1500 ft over the river and a double-track railroad.

Bethlehem's contracts covered fabrication and erection of bridge superstructures of various types in Montgomery, Carbon and Luzerne counties. The Northeastern Extension is a project of the Pennsylvania Turnpike Commission.

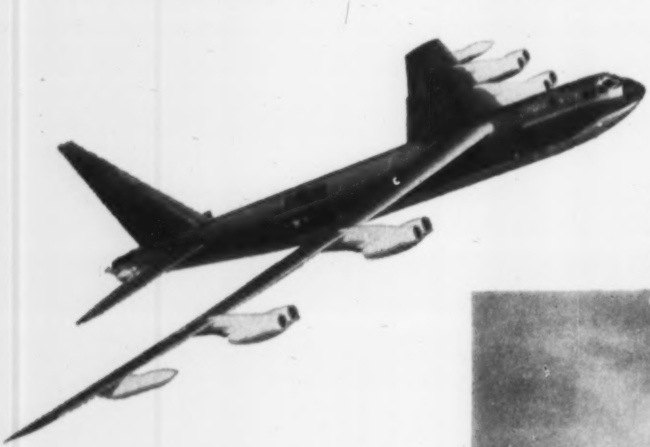
◀ **Beginning at a point on the turnpike's "main line" near Norristown, the Northeastern Extension provides a speedy, intersection-free route to Allentown-Bethlehem, Wilkes-Barre and Scranton, where it will terminate for the present.**

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

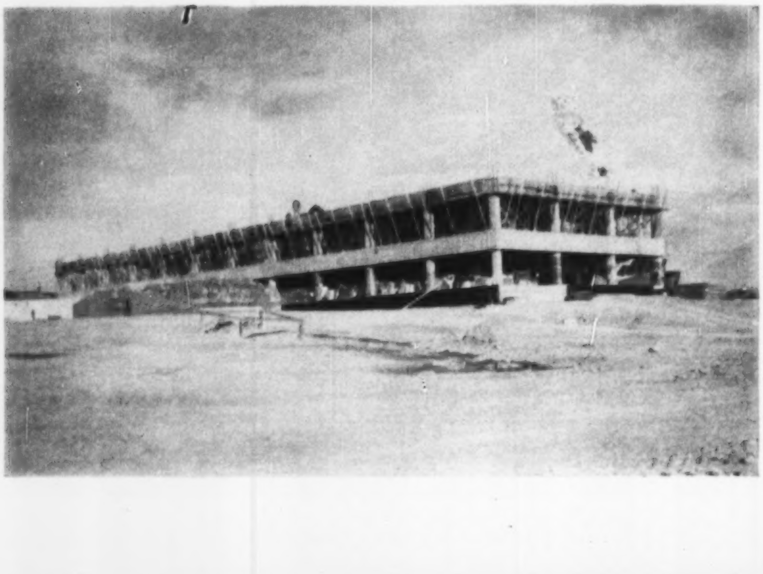
**On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. *Export Distributor:* Bethlehem Steel Export Corporation**

**BETHLEHEM STEEL**

BETHLEHEM STEEL



For security reasons, overall photos of the new SAC control building must remain restricted. However, a portion of the building is shown under construction. Evident here and opposite are Ceco Steel Reinforcing Bars, which make the headquarters a steel-ribbed buttress against attack. U. S. Corps of Engineers and Leo A. Daly Company, joint architects-engineers. Robert E. McKee, Inc., general contractors. Construction photos by Corps of Engineers. B-52 jet bomber photo courtesy Headquarters, SAC.



# HIDDEN FINGERS OF STEEL

## *that give Strategic Air Command Headquarters the strength of an Impregnable Fortress...*

In this Atomic Age, our armed forces buildings must be more destruction-proof than ever—must be able to meet tests beyond the stretch of man's imagination. So reasoned the United States Corps of Engineers and Leo A. Daly Company, joint architects-engineers, in planning the new Strategic Air Command control building at Offutt Field, Omaha. That's why Ceco Steel Reinforcing Bars were assigned to duty at SAC headquarters . . . called up to guard the nerve center of America's long-range all-jet striking force. So today **TOP SECRET** hundred tons of hidden fingers of steel add tensile strength to concrete walls **TOP SECRET** feet thick . . . roofs and floors varying from **TOP SECRET** to **TOP SECRET** feet in depth.

But there's nothing "top secret" about why Ceco Steel Reinforcing Bars were chosen for this vital project. The architects, engineers and contractor all knew they could depend on Ceco's engineering and fabrication. Ceco's reputation for service was a factor. SAC is prepared day and night to deliver nuclear knock-out weapons against an enemy anywhere in the world. And this combat readiness demands the same all-out effort from suppliers.

"*We can't say too much in appreciation for the cooperation and good service given to us by the Ceco organization on this job,*" *said Carl Taylor, McKee superintendent.* "*The fabrication of the steel and timing of deliveries has been of great help to our progress. We certainly give all credit to suppliers like Ceco, who know their business and demonstrate that fact consistently, delivery after delivery.*"

On your next building project, let Ceco Steel serve you, too, just as it has served Armed Services suppliers and thousands of other customers for 44 years. Consult Ceco engineers in the pre-planning stage . . . not only for better construction, but to cut time, material and labor costs. CECO STEEL PRODUCTS CORPORATION—offices, warehouses and fabricating plants in principal cities—general offices at 5601 West 26th Street, Chicago 50, Illinois.

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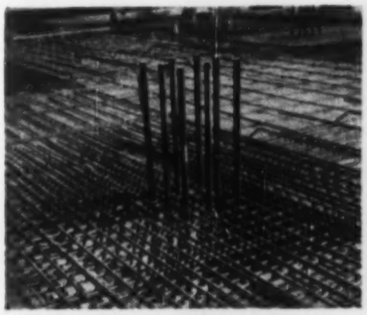
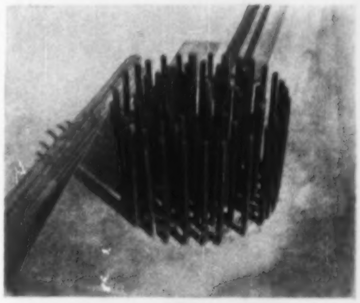
**IN CONSTRUCTION PRODUCTS CECO ENGINEERING MAKES THE BIG DIFFERENCE**

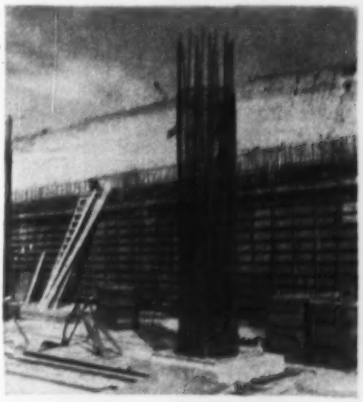


Typical installation of Ceco Steel Reinforcing Bars for column and floor construction at new SAC control building.

Ceco Steel Reinforcing Bars in one wall of new SAC control building.



Typical arrangement of Ceco Steel Reinforcing Bars embedded in foundation for a column in new SAC control building.

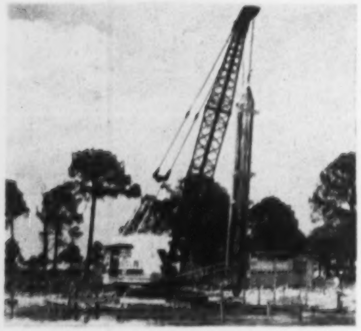


Ceco Steel Reinforcing Bars and Spiral are shown here in place, ready for forming and pouring of concrete column.

G.I. BILL
EXCAVATION
75

# "I built my business on GarWood dependability!"

## —says William J. Booth, Pinellas Park, Florida



Here, one of Bill Booth's "75's" works with a Vibra-Flotation attachment packing sand for a school foundation. Another "75" is currently being used to dig drainage ditch for the development of river front property. His third Gar Wood machine works in a pit, loads out 1200 yards of fill per day.

Bill Booth knows from experience that good equipment is essential to success as a contractor. He reports: "I started in the excavating business with a Gar Wood '75B' dragline five years ago. Today my equipment spread includes three Gar Wood machines. They've been good, dependable machines . . . delivering the production I need *when* I need it!"

This kind of low-cost, dependable production is the result of many Gar Wood "75" design advantages. Independent travel while swinging gives you mobility to speed loading . . . you can hoist or swing while moving. Power actuated drum clutches increase production by reducing operator fatigue. Direct manual controls retain true operator "feel".

Maintenance is easier, too. Gar Wood's massive crawler base takes extreme shock and strain. Heavy-duty conical hook double rollers eliminate pin strain and rocking under load. Compact machinery deck is easily accessible for adjustments or servicing.

Gar Wood excavators are built by specialists in ¾ yard machines. Call your Gar Wood dealer and find out how this specialization can pay off on your jobs. Or, write to: Customer Service Dept., Gar Wood Industries, Inc., Wayne, Michigan.

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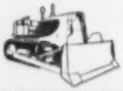
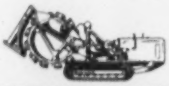
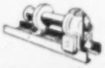
Gar Wood-Buckeye Hi-Way Wideners


Gar Wood Tractor Equipment


Gar Wood-Buckeye Ditchers

Gar Wood-Buckeye Finegraders


Gar Wood Winches

Gar Wood-St. Paul Hoists & Bodies

## Upper Colorado Project Financing:

# Repayment Plan for Multipurpose Reservoirs

**Ival V. Goslin**
Engineer-Secretary
Upper Colorado River Commission

Proponents of reclamation projects in all states will be watching the experimental repayment plan under which multipurpose reservoirs of the Upper Colorado Project are to be financed. The plan—as detailed in Public Law 485, passed by Congress in its latest session—is unique. It is so because it involves two basic principles:

- The concept of comprehensive basin-wide development for river regulation and power production.
- The re-establishment of state lines in the use of excess power revenues for repayment of irrigation costs.

The overall development known as the Upper Colorado River Storage Project was originally conceived and planned as a comprehensive basin-wide development of the water and power resources of the Upper Basin. For the most part, state lines were disregarded and emphasis was placed upon development of the Upper Basin rather than upon development of resources of the individual states; this concept was believed to conform to the intent of the Upper Colorado River Basin Compact.

Excess power revenues to be derived from the sale of hydroelectric energy produced at the large main-stem storage units were to be used to retire the costs of water-consuming irrigation projects (participating projects) that were beyond the capability of the water users to repay without regard to state location of the projects as long as they were situated within one of the four Upper Basin states.

## • Colorado Objected

The governor of Colorado and people on the western slope of that state objected to legislation as originally introduced in the Congress to initiate the development under this strict basin-wide principle, which, in effect, erased state lines. Their objections were based upon the premise that the legislation did not provide sufficient and equitable benefits for the State of Colorado which received 51.75% of the consumptive use of water under the Upper Basin Compact and from whose watershed comes about 70% of the virgin flow of the river.

To overcome these objections and allay the fears of Colorado that the construction of water-use projects in the other three states might proceed more rapidly and to the detriment of future developments in Colorado in was proposed by the Colorado governor that excess power profits from the power-producing storage units, such as the Glen Canyon Dam, should be credited to a fund within the U. S. Treasury in percentage apportionments the same as water allocations in the Upper Basin Compact (see table). These revenues credited to each state were to be used for paying for participating projects within each state; thus, limiting the possible future development of water resources in each state to the amount of money available to its credit, because all of the projects would need financial help from some outside source, such as money collected from power revenues.

## • Credits Refined

A further study of this complicated and controversial problem revealed that apportioning the excess power revenues on the same basis as the percentage allocations of consumptive-use of water in the Upper Basin Compact would not make possible repayment of the costs of participating projects in two of the states because of the high cost of those projects and the small amount of revenue going to those states under the apportionment formula.

Consequently, the proposition then was advanced that the power profits should be credited for use within the individual states on the basis of the percentage of presently unused consumptive use of water remaining to each state from its apportionment in the Upper Colorado River Compact, with modifications to allow for exceptional conditions existing in any particular state. These percentages were based upon the assumption that under the terms of the Colorado River Compact of 1922 there would be 7,500,000 acre-ft of water available per year to the Upper Basin.

This latter proposition is incorporated in Public Law 485. Therefore, we now have a law on the books providing for the authorization of a federal water resources development program which provides for a comprehensive basin-wide development of the water and power resources by large main-stem power-producing and river-regulating dams and reservoirs, but which guarantees the use of excess revenues for the repayment of costs of water-use projects in individual states.

## • Law Is Different

The repayment features and accounting and funding requirements for the Colorado River Storage Project differ greatly from those for reclamation projects previously authorized by Congress. In summary, Public Law 485 provides:

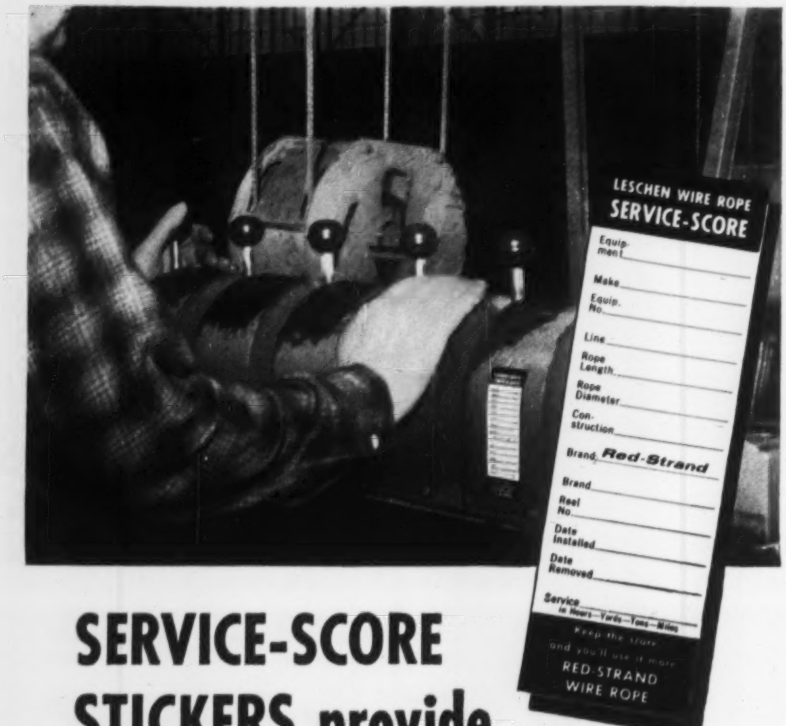
1. for the creation of an Upper Colorado River basin fund to which all **appropriations** from the general fund of the U. S. Treasury shall be credited as advances, except those for recreational purposes, which are nonreimbursable;
2. that all **revenues** (power, munici-

### Based on the Colorado River Compact of 1922:

**Consumptive use of the waters of the Colorado River System was divided between the Upper Basin (Colorado, New Mexico, Utah, Wyoming) and Lower Basin (Arizona, California, Nevada) by the Colorado River Compact of 1922. Subject to the provisions and limitations contained in the 1922 compact, the five states of the Upper Basin in 1948 agreed under the terms of the Upper Colorado River Basin Compact to an apportionment of waters allocated to the Upper Basin in the following manner:**

| | |
|---|---|
| **Arizona (a lower basin state)** | **50,000 acre-ft per yr** |
| **Colorado** | **51.75% of the balance** |
| **New Mexico** | **11.25% of the balance** |
| **Utah** | **23.00% of the balance** |
| **Wyoming** | **14.00% of the balance** |

**The Upper Colorado River Basin Compact also created the Upper Colorado River Commission, through which the four Upper Division States (Colorado, New Mexico, Utah and Wyoming) act as a unit in securing the expeditious agricultural and industrial development of the Upper Basin.**



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**LESCHEN WIRE ROPE DIVISION**
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**St. Louis 12, Missouri**

pal water, irrigation or other) derived from storage units or water-using participating projects shall be credited to the basin fund and shall be available for paying operation, maintenance and repair and emergency costs, and costs of power and municipal water features of storage units and participating projects within 50 years with interest;

3. that each participating consumptive-use project must pay its own operation, maintenance and emergency changes from its own revenues;

4. that costs of storage units allocated to irrigation shall be returned from revenues in the basin fund within 50 years;

5. that revenues in the basin fund in excess of amounts needed to defray costs under (2), (3), and (4) above shall be apportioned within the basin fund to the credit of the states as follows:

| | |
|---|---|
| Colorado | 46% |
| New Mexico | 17.0% |
| Utah | 21.5% |
| Wyoming | 15.5% |

for the purpose of returning the costs of irrigation allocations of participating projects within 50 years that are beyond the ability of the water users to repay;

6. that if a participating project has power and/or municipal water facilities in addition to irrigation facilities, it must pay from its own revenues the operation, repair and maintenance and emergency charges for all its facilities, repayment of its power costs and its municipal water costs, and interest on its own power and municipal water investments;

7. that after all the costs of (6) are paid from the revenues of the participating project, if there are excess revenues remaining in the Basin Fund that were derived from its own power and/or municipal water facilities, the excess is credited within the Basin Fund for use within the state wherein the project is located before the percentage apportionments of (5) above are applied;

8. that excess power revenues credited within the basin fund to each state may be used for repaying costs of irrigation projects only within that state, and may not be used within another state unless appropriate consent is obtained;

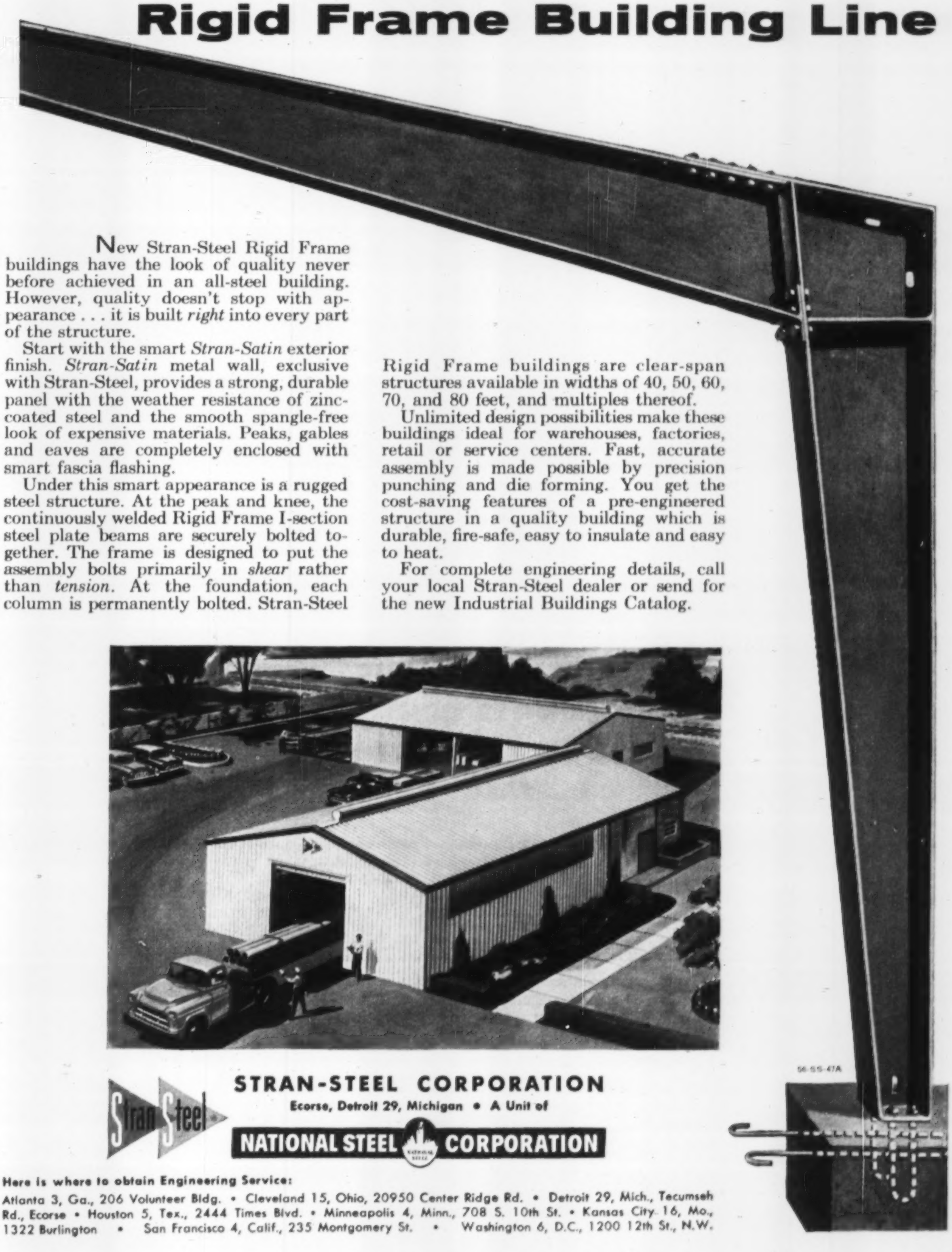
9. that business-type budgets must be submitted each year to Congress.

Development of resources within each of the states is only indirectly limited by the water supply or by the allotment of water under compacts. The direct limiting factor has become the amount of money credited within the basin fund for use within each state.

Among the other unique features of this reclamation law is the manner of

Get Rugged Clear-Span Design • Luxury Look of Stran-Satin with

# New Stran-Steel Rigid Frame Building Line



New Stran-Steel Rigid Frame buildings have the look of quality never before achieved in an all-steel building. However, quality doesn't stop with appearance . . . it is built *right* into every part of the structure.

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Unlimited design possibilities make these buildings ideal for warehouses, factories, retail or service centers. Fast, accurate assembly is made possible by precision punching and die forming. You get the cost-saving features of a pre-engineered structure in a quality building which is durable, fire-safe, easy to insulate and easy to heat.

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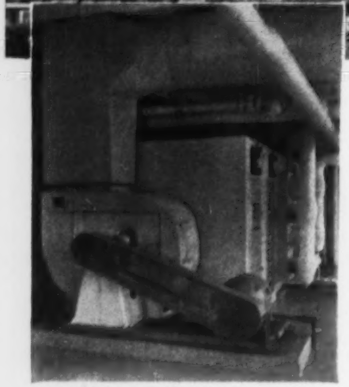
New Henry Ford Hospital Clinic, Detroit, Mich. (background). Voorhies, Walker, Smith & Smith, Architect-Engineers; R. L. Spitzley Company, Mechanical Contractors; George A. Fuller Company, General Contractors.



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Low noise level is but one of many reasons why "Buffalo" ventilating fans are overwhelmingly preferred in our modern air-conditioned buildings. Reliable operation and rated performance are further inducement for you to insist on "Buffalo" "Q" Factor* Air Handling Equipment for your important air jobs.

**The "Q" Factor — the built-in Quality which provides trouble-free satisfaction and long life.*

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treating costs of projects which will create benefits for the Navajo Indian Tribe. In recognition of the fact that assistance to these Indians is the responsibility of the entire nation, and not of the State of New Mexico alone, the legislation specifies that when the Navajo irrigation project is authorized, the costs of irrigation allocations beyond the capability of the land to repay shall be nonreimbursable.

Another part of the law states that payment of construction costs within the capability of the land to repay will be deferred for as long as the land remains in Indian ownership. In addition, the Navajo Dam and Reservoir, prerequisite features to the irrigation of Indian lands, which will have no power producing facilities and limited river-system-regulation values, has been classified as a Storage Unit. By virtue of this classification and the fact that its estimated cost of $36.6 million is allocated mostly to irrigation, this dam and reservoir will be almost entirely paid for by excess power revenues from other Storage Units such as Glen Canyon Dam in Arizona, because revenues used to pay for irrigation allocations of Storage Units are not subject to the percentage apportionments among the states which are discussed above.

The exceptional features of the repayment plan embodied in this new reclamation law constitute an interesting innovation in the financing of regional and state water resource developments. For this reason the people of the states of the Upper Colorado River Basin, through their representatives on the Upper Colorado River Commission, must continue to recognize the responsibility with which they have been charged under the law and must work closely together in order to make this complex scheme succeed.

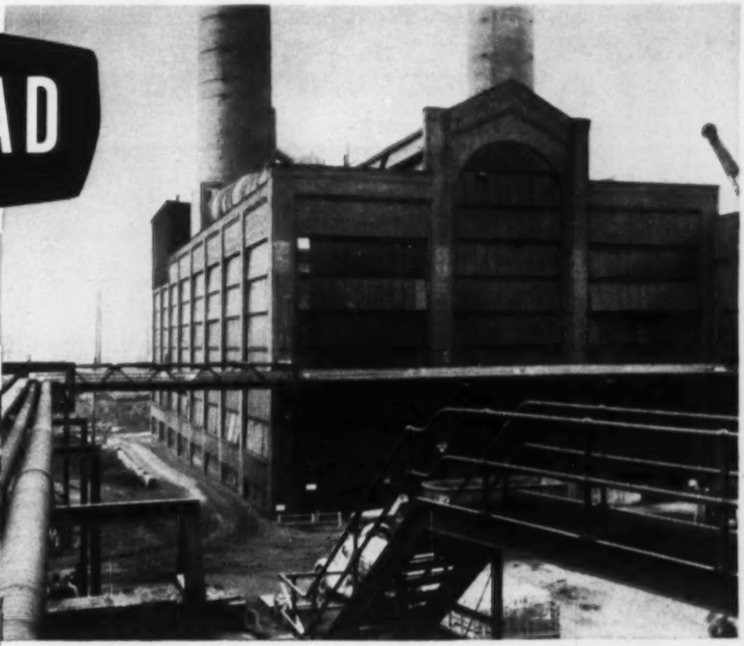
## Toronto Apartment Boom

A boom in apartment house construction has come to Toronto, a city that until recently was characterized by individual homes. The homes are being demolished to make way for new apartment buildings up to 14 stories high. A city law requires all of the buildings to provide underground parking facilities.

Steel frame and brick, or reinforced concrete are the types of construction employed. Similar to many modern apartment buildings in Europe and South America, the structures often have visible "stilts" or columns in the first story. These support part of the building and form an entrance. A concrete foundation two floors below street level generally supports the structure.

## OVERHEAD

OR
**underground**



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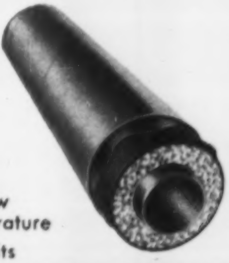
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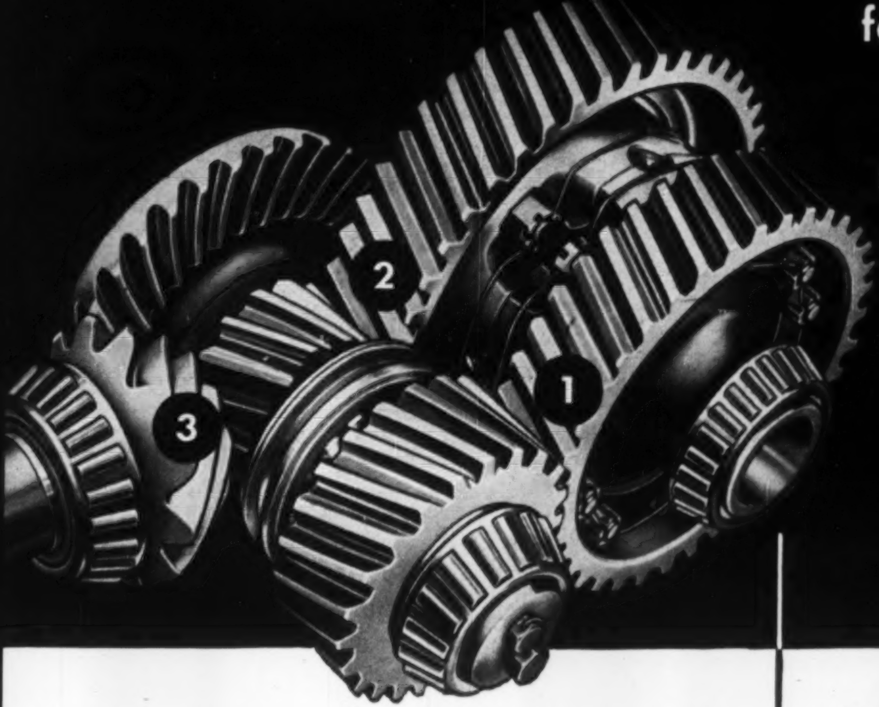

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WITHOUT wasteful excessive weight.

WITHOUT increased driver fatigue.

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WITHOUT higher initial vehicle cost.

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**TIMKEN Detroit AXLES**

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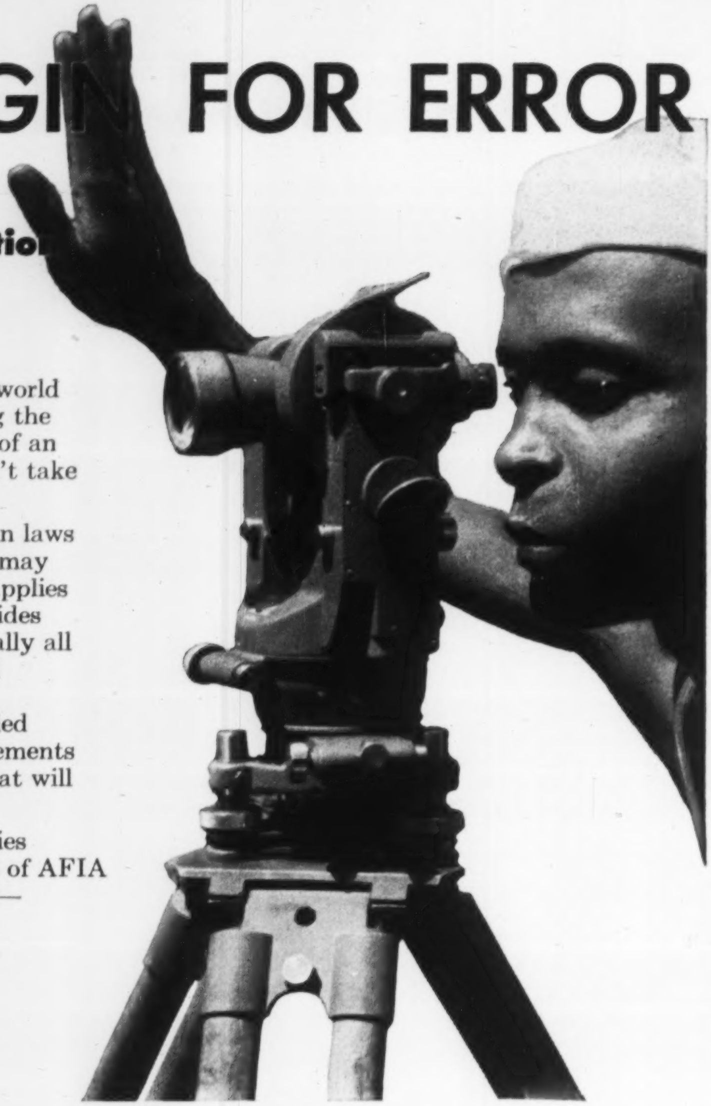
# NO MARGIN FOR ERROR

**in your overseas protection**



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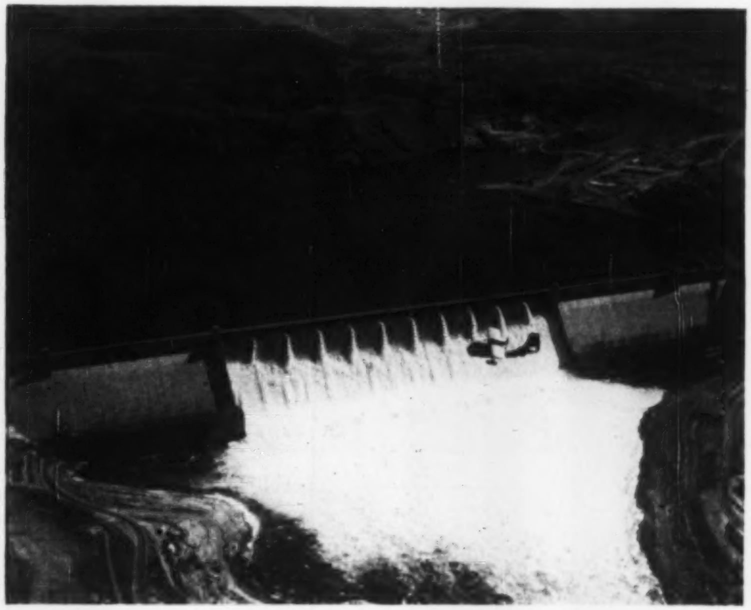

**STILL CHAMP:** Among other records, Grand Coulee holds world's mark for capacity of individual Francis turbines—165,000 hp.

### At Fifth Congress in Vienna . . .

## World Group Assesses Power Progress

The fifth World Power Conference held in Vienna, Austria, this summer offered 2,000 delegates from all corners of the globe their choice of 276 papers dealing with every aspect of power. Subjects covered included the present status of power production in the various countries; preparation and conversion of solid, liquid and gaseous fuels; utilization of energy sources—common fuels, hydro (including tidal power), nuclear, solar, wind and geothermal; and purification of waste water and exhaust gas from the production of energy.

A non-technical highlight of the congress was the extent and excellence of contributions from the Soviet Union and her satellites, including Communist China. The Russians alone presented 20 papers, as compared with 29 from western Germany, 27 from Austria and Great Britain, 23 from the U. S. and 18 from France.

Most of the papers adhered to the general theme of the conference, recounting progress made since the fourth meeting held in 1950 in London (previous congresses were held in Washington, D. C., 1936; Berlin, 1930; and London, 1924, the founding year). Measured in kwh, the world's gross theoretical production of energy, not including that from wood, increased from 20,500 billion kwh in 1950 to 23,400 billion kwh in 1953, or an average annual growth of 4.4%. A breakdown of sources shows coal providing 56%, petroleum 29%, natural gas 13% and hydro power 2%.

Losses in refining, energy conversion and transmission to users bring the useful energy consumption to about 35% of the theoretical energy production, with about 78% of the reduced figure used for heating and 22% for mechanical power.

• **Electricity consumption**—Electricity consumption in 1953 amounted to 1,200 billion kwh, or 14% of the world's useful energy consumption, not including energy from wood. Hydro power supplied 425 billion kwh or 5% of the useful consumption. Yearly growth of electrical consumption is over 10%, but the portion generated from hydro power is increasing at only an 8½% annual rate. For example, in Europe, water power supplied 37% of the electrical needs in 1950, 36% in 1954. In the U. S., figures for those same years are 29% and 23%.

Delegates to the WPC heard a description of probably the largest concentration of power potential in the world today. High in the Himalaya Mountains of Tibet, the Brahmaputra River, known as the Tsangpo in its upper reaches, follows a U-shaped course. By driving a 10-mi tunnel across this loop, a 7,000-ft head could be obtained, capturing somewhere between 38,000 and 85,000 cfs. Installed capacity could vary between 17 million and 38 million kw. Annual output could range between 150 billion and 330 billion kwh.

An indication of technical progress in water power development is contained in current record figures. Maximum generator capacity is 150,000 kva (at Stornorrfors in Sweden); highest heat utilized is 5,740 ft (at Reisseck, Austria); largest flow handled is 170,000 cfs (at McNary Dam in the U. S., which may have an ultimate capacity of 291,000 cfs). The Russians are planning to install 200,000-kva turbogenerator sets in the Bratsk Station in Siberia.

• **Turbine progress**—Turbine efficiencies have risen to an average of 93% for Kaplan type, 92% for Francis turbines and 91% for Pelton wheels. Highest heads utilized are 226 ft by Kaplan turbines (Bort, France), 1,476 ft by Francis units (Fionnay, Switzerland) and 5,740 ft by Pelton wheels (at the Reisseck installation). Present maximum turbine ratings are 111,000 hp for Kaplans (McNary), 165,000 hp for Francis (Grand Coulee, U. S.), 150,000 hp for Pelton wheels (Cimego, Italy, and Kemano, Canada), and 102,000 hp for pump-turbines (Hiwasse, U. S., ENR June 21, p. 45).

Widespread efforts to make the Kaplan turbine suitable for high heads, has sparked development of a Francis turbine with adjustable blades by the English Electric Co., London. The unit is reversible for use as a pump. Laboratory tests gave the flat efficiency curve and the overload capacity associated hitherto only with the Kaplan turbine, but for heads as high as 300 ft. Heads up to 780 ft are being investigated. Axes of the vanes, instead of being at right angles to the turbine shaft, are inclined to it, thus overcoming the hydraulic limitation of the movable vane turbine (Kaplan) as regards high heads.

A pump-turbine version of this feathering Francis turbine has been installed at Sir Adam Beck II station

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Stop unnecessary damage to industrial cars, trucks and cargo with smooth, durable Permacrete pre-cast concrete Crossing Slabs. Time, weather and high-impact traffic play havoc with ordinary railroad crossing materials but Permacrete slabs provide the maximum in strength and safety, coupled with low initial cost and no down time for repairs. Don't settle for less . . . Get Positive Performance with Permacrete.

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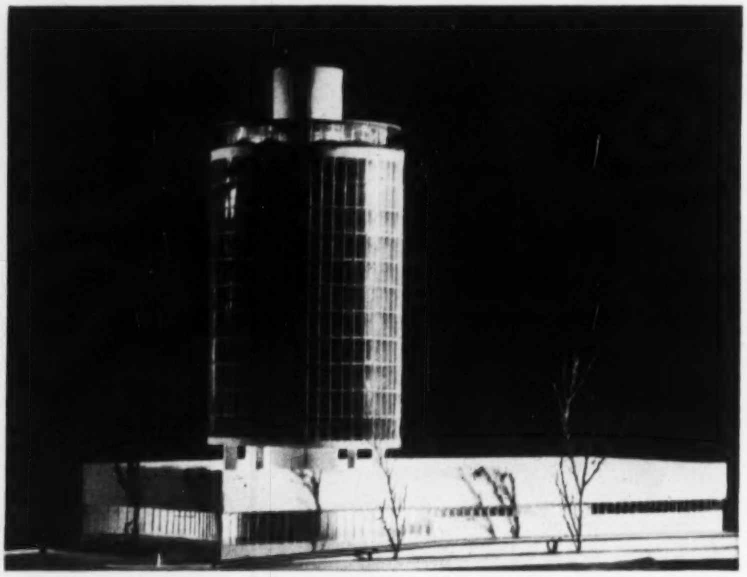


# Heliport, Rotating Cabaret Atop Hotel

**Construction will get under way soon on a hotel building in Melbourne, Australia, that features among other things a built-in heliport and a revolving glass cabaret atop a circular glass tower ten stories high. French contractors expect to complete the $2-million building within two years.**

**Load-bearing partitions will be used to support the building, which will have no interior columns. Precast, prestressed lightweight concrete components will comprise the chief structural element.**

**The landing platform for helicopters will be located at the rear of the tower. The tower will be 70 ft in dia. Its windows will be cleaned from an adjustable seat to be suspended from a track that will circumscribe the top of the tower.**

**Within the hotel, 110 rooms are to be provided. Visitors will enter through a 100-ft expanse of clear glass.**

on the Niagara River where the highest head is 90 ft (limit of Kaplan turbine as a pump is 30 ft).

The adjustment blade Francis runner was chosen because it minimized the vibration problem associated with swivel gates when a conventional Francis is pumping (ENR Sept. 10, 1953, p. 33).

Pumped storage is being given increasing attention, particularly in Europe. If the base load is delivered by atomic power plants, pumped storage plants (run by off-peak hydraulic or thermal power) will assume greater importance.

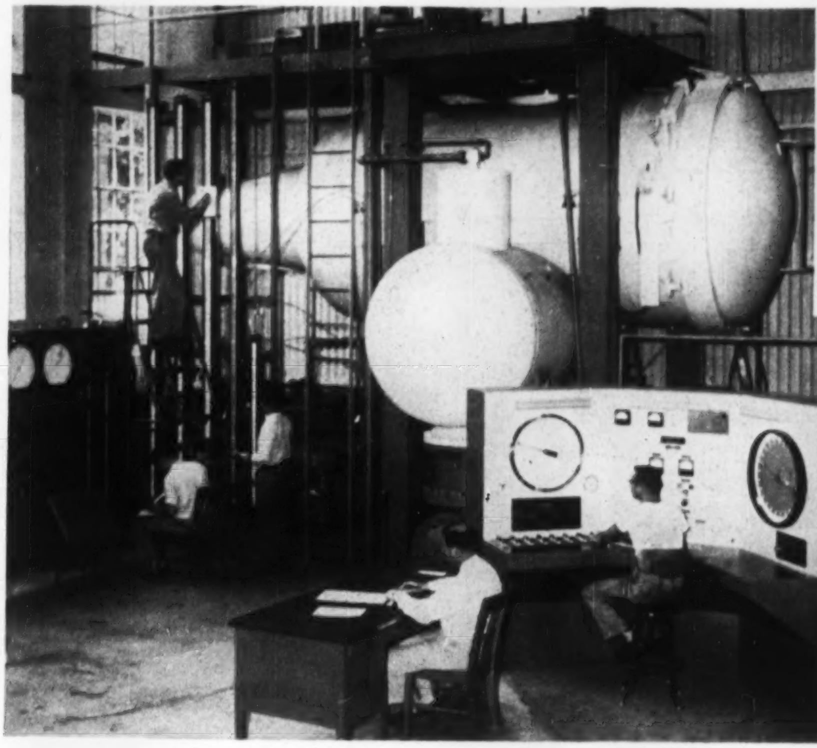
With the advent of nuclear power and the increasing scarcity of water power sites, many conferees felt that in the future the main characteristic of hydro power will be its coordination in large systems with the other forms of electrical power, at least in North America and Europe.

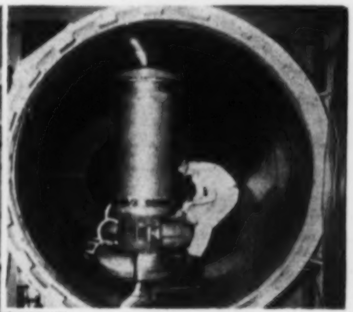
• **Nuclear power**—Last year's atomic energy conference in Geneva, Switzerland, apparently worked to hold down the number of papers presented at the WPC on this subject. The main item of interest was a revelation of Soviet aims in this field. The Russians plan to have 2.5 million kw of nuclear plant in operation in the next five years, mainly in stations 400,000 to 600,000 kw in size.

Great Britain plans a 10-year program of nuclear plant construction, with a total capacity of 2 million kw. By 1975 it is presumed that coal and atomic energy will be producing equivalent amounts of electricity.

• **Other energy sources**—Geothermal heat, usually in the form of steam escaping from the earth under pressure, is being utilized for electric power generation in Italy, where 400,000 kw of capacity is installed. Iceland, Japan and Mexico also posess extensive resources of this type, but only Iceland has utilized them—for heating of homes.

About 1 billion kwh worth of en-





A complete model turbine wheel case assembly, built to extreme accuracy, is shown being mounted in the testing chamber.

New high head test stand in the SMS Hydraulic Laboratory, including control panel and gages.

## High Head Turbine Test Stand At SMS Laboratory
## DUPLICATES FIELD CONDITIONS

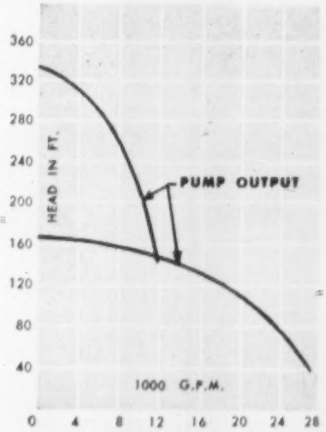
With the addition of its new high head test stand, the SMS Hydraulic Laboratory can now test homologous model turbines under controlled conditions that *duplicate* those found in the prototype installations. This is a substantial stride forward in hydraulic turbine research, since the complete reproduction of actual field conditions has not previously been possible.

The outstanding features of this new facility are:

- World's highest artificial testing head.
- Flows of 5,000 g.p.m. under 300-foot head, and 21,000 g.p.m. under 100-foot head.
- 300 H.P., 0 to 6,000 R.P.M., eddy current dynamometer.
- 100-ton water cooling system to maintain prototype water temperature.

Both basic research and formal contract acceptance tests are performed here. Test stand equipment permits testing of all Kaplan and Propeller, as well as many Francis turbine designs, under conditions of *head* and sigma that *duplicate* those found in the field. This provides a high degree of testing accuracy and permits accurate testing of settings that cannot be satisfactorily field tested.

For further information on the significance of this high head test stand, write to S. Morgan Smith Co., York, Pa.



Pump Head-discharge Curves for Series and Parallel Operation.

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AFFILIATE: S. MORGAN SMITH, CANADA, LIMITED, TORONTO

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ergy is produced from methane gas extracted from coal mines in the Saar region in Europe through small bore holes drilled before the coal is mined. Part of the gas is burned in power stations at the mines, while the remainder is treated in cracking plants and fed into a long-distance gas pipeline system.

• **Gas supply**—The World Power Conference documented the growing importance of long-distance gas supply lines, reflected in the U. S. by ASCE'S recent establishment of a pipelines division. In the United States, natural gas satisfies 25% of the energy demand of the nation. Countries such as Italy, France, India, Russia, Argentina and Austria have large natural gas expansion programs under way.

World opinion is unanimous that only steel pipes with welded joints should be considered for long-distance gas lines. But in some countries butt welding is preferred, while in others socket and spigot welding is employed. Factors of safety used in designing thickness of pipelines vary greatly; a slight trend toward the use of lower factors, based on experience, is now discernible.

A 20-volume report of the WPC papers and discussion is planned for publication next spring, and can be obtained from the U.S. National Committee, World Power Conference, 29 W. 39 St, New York 18, for $144.

## Krupp Plans Shipyard Near Chilean Steel Mill

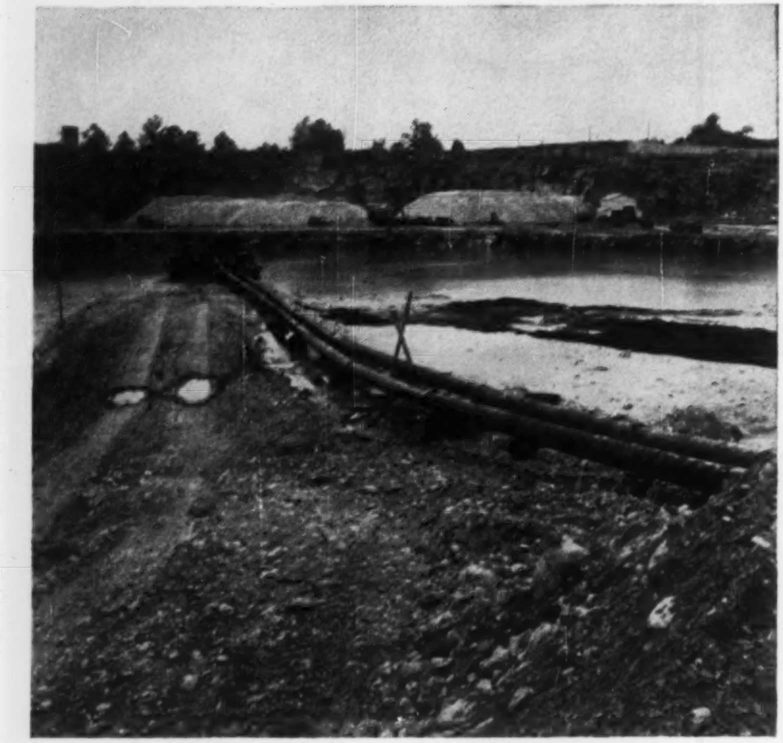
Krupp engineers have suggested establishment of a shipyard in Concepcion, Chile, near the country's steel mill. Working from their Mexico City headquarters, Krupp's experts have spent approximately two years studying Central and South American investment possibilities in steel and allied lines.

As a result of its studies, the German firm has indicated a willingness to make an initial investment of $6 to $8 million to set up a shipyard with an annual capacity of 30,000 tons. The yard would at first be devoted to repair work on Chilean merchant vessels, but would later shift to construction for the Chilean navy of small barges, tugs and ships of two to 5,000 tons.

Krupp engineers have already submitted definite proposals for repairs to the drydock at Talachuano, and have also expressed some interest in Chilean iron and Copper mining operations.

NO SECRET

About NAYLOR Performance



De-watering quarry after Hurricane Diane

The familiar Naylor spiral brings the outstanding performance of this light-weight pipe right out into the open — for water, air, ventilating and materials handling in construction service.

It's no secret that Naylor's exclusive lockseamed, spiralwelded structure means extra strength and safety. The spiral truss acts as a continuous expansion joint to absorb shock loads, stresses and strains. In addition, it provides greater collapse strength for push-pull ventilation and other applications normally requiring heavier-wall pipe.

For all-around service on construction jobs, you can depend on Naylor pipe, in diameters from 4" to 30", to get the economy of light weight without sacrifice of performance.

**Write for Bulletin No. 507.**

NAYLOR PIPE

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# Take a tip from builders of great American roads

**Edsel Ford Expressway,** *important new traffic artery in Detroit, Michigan, is reinforced with American Welded Wire Fabric.*

Take a tip from the Pennsylvania Turnpike Commission, the Ohio Turnpike Commission, the Indiana State Highway Department, and others who are lacing America together with a network of outstandingly fine superhighways and thruways. Take a tip from them and use quality construction materials manufactured by American Steel & Wire to increase the life, the comfort, and the safety of your new roads.

Make your Portland Cement concrete slabs 30% stronger, at extremely low cost, with American Welded Wire Fabric. You will find it easy to handle . . . readily available in any size and style you need (greatly expanded manufacturing facilities assure this).

Use longer concrete slabs for smooth riding, to reduce installation costs and speed construction. Use American Road Joints to provide proper load transfer for a balanced pavement design.

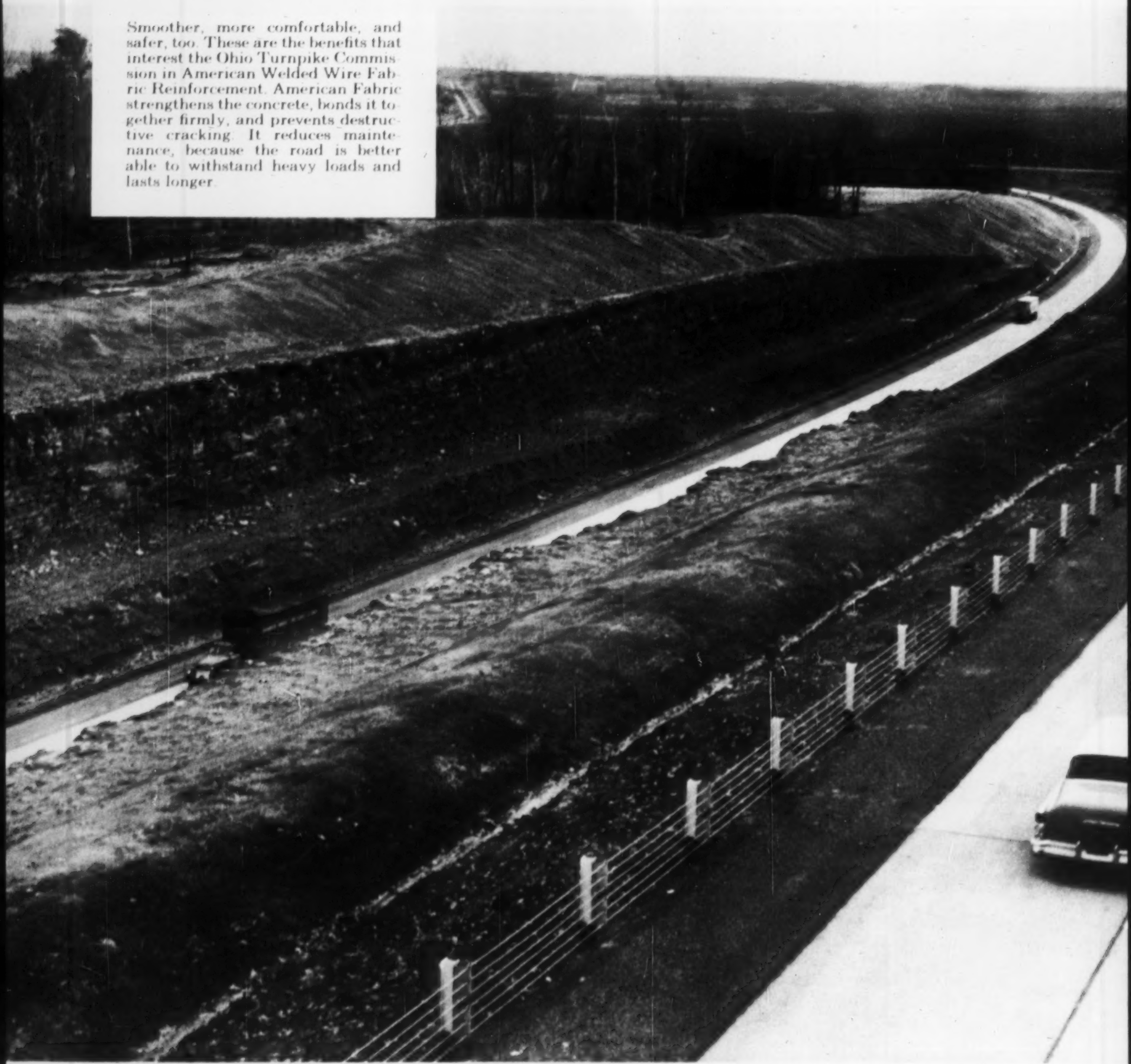
Help prevent off-road crashes with Multisafty Cable Highway Guard and American Beam-type Highway Guard.

You will find interesting new applications of these fine products on the next few pages. We think it will be worth your while to read on.

On a great "AMERICAN" road

...American Fabric and Road Joints reduce

...American Highway Guard reduces fatal

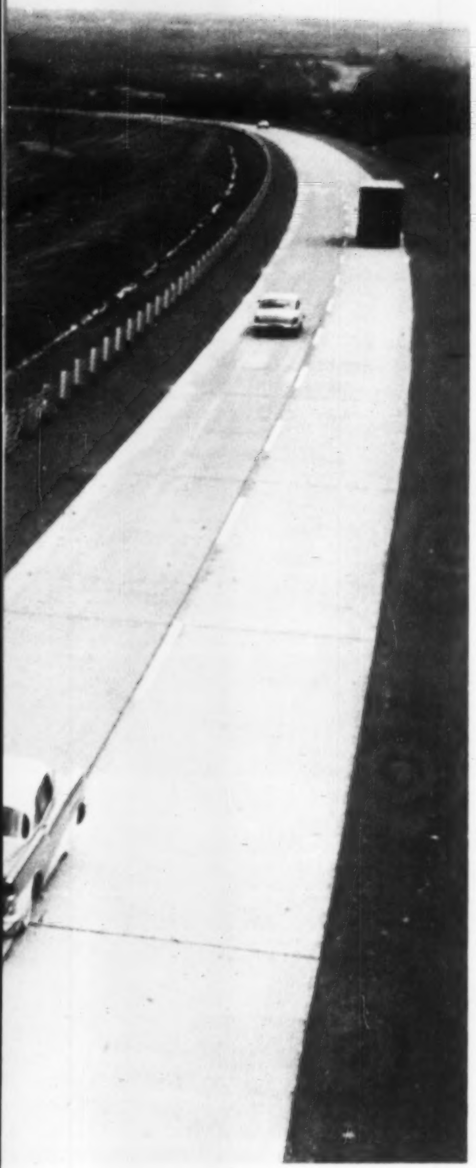


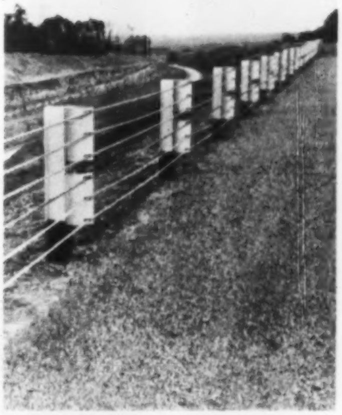
Smoother, more comfortable, and safer, too. These are the benefits that interest the Ohio Turnpike Commission in American Welded Wire Fabric Reinforcement. American Fabric strengthens the concrete, bonds it together firmly, and prevents destructive cracking. It reduces maintenance, because the road is better able to withstand heavy loads and lasts longer.

USS American Welded Wire Fabric

# —THE OHIO TURNPIKE

## maintenance accidents





Multisafty Cable Highway Guard makes this section of the famous Ohio Turnpike safer. The precipitous drop needed extraordinary protection. A special six-cable Multisafty Guard was designed to assure maximum protection. Elsewhere on the turnpike, four cables were used.

The longer reinforced slabs on the Ohio Turnpike provide a low cost, smooth-riding surface. And specially designed American Road Joints were used to keep the slabs in proper alignment and to provide adequate load transfer for a balanced pavement design.

Expanded facilities for the manufacture of American Welded Wire Fabric now make it readily available in wire sizes up to and including ½″ in diameter, at 2″, 3″, 4″, and 6″ on center. American Fabric increases the life of both Portland Cement Concrete and asphaltic concrete pavements. It meets ASTM Specification A 185-53T.

When it comes to safety, remember that USS Multisafty Cable Highway Guard protects in two ways: it restrains uncontrolled vehicles and it cushions the impact of collision between vehicle and guard.

Send this coupon for complete facts about American Steel & Wire products that can increase the safety and help reduce the long-term cost of your roads.

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COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO, PACIFIC COAST DISTRIBUTORS
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- ☐ American Welded Wire Fabric for Portland Cement Concrete
- ☐ American Welded Wire Fabric for Asphaltic Concrete
- ☐ American Welded Wire Fabric for Airport Runways
- ☐ American Road Joints
- ☐ Multisafty Highway Cable Guard
- ☐ American Beam type Highway Guard
- ☐ American Wire and Strand for Prestressed Concrete

Name ..........
Firm ..........
Address ..........
City .......... State ..........

# USS Multisafty Highway Guard

UNITED STATES STEEL

# 3 MORE GREAT "AMERICAN" ROADS

### John Lodge Expressway strengthened with American Welded Wire Fabric

This outstanding urban thruway and its companion, the Edsel Ford Expressway, in Detroit, were reinforced with American Welded Wire Fabric for longer life, reduced maintenance.

### Maine Turnpike protected with American Highway Guard

On this particular section of the Maine Turnpike, highway engineers preferred a beam-type guard and American Steel & Wire supplied it. On other sections of this important northeastern road, USS Multisafty Cable Highway Guard is being used.

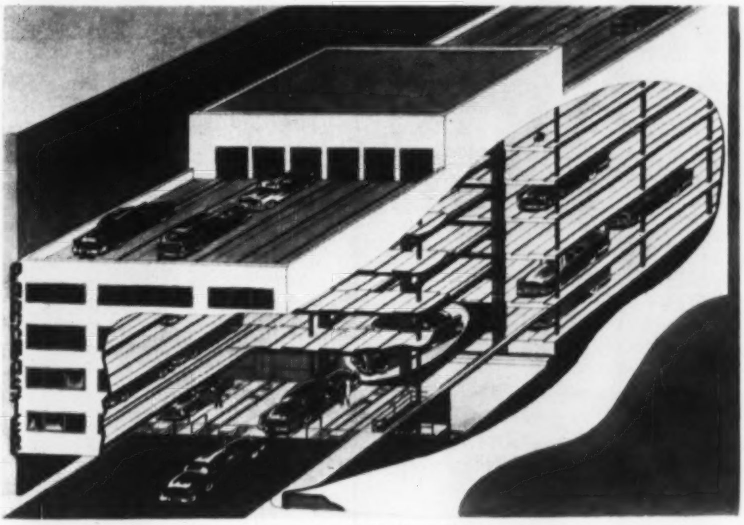
### Indiana Toll Road strengthened with American Road Joints

Scheduled for completion late this year, the new Indiana Turnpike is another important link in a growing network of East-West superhighways. American Welded Wire Fabric, together with adequately reinforced joints, provides maximum corner protection for this concrete pavement.

For complete information about Construction materials manufactured by American Steel & Wire, send the coupon on the previous page.

# USS American Welded Wire Fabric
# USS Multisafty Highway Guard

USS UNITED STATES STEEL



TURNING ELEVATOR can move horizontally and vertically at the same time.

# Rotating Elevator Parks Locked Cars

A new-type turntable elevator that parks cars two deep on concrete or steel decks, makes its debut this month in a 6-story, 172-car parking garage opening in Spokane, Wash. Called the Parkmaster, the unit will soon be installed also in a 344-stall, 8-story garage in Winnipeg, Manitoba. In California, four more of the units have been ordered. Lift-slab construction is being used on the Spokane garage while that in Winnipeg will be of cast-in-place concrete.

These advantages are cited:

- Cars are parked in stalls two deep.
- Cars can be left locked.
- Cars are always headed in the proper direction for the driver.
- 75% of lot space can be used to store cars.

Parkmaster's unusual elevating unit is a hydraulic self-levelling lift with an oval turntable, 23 ft long and 19½ ft wide. The turntable holds two passenger cars. In its center is a vertical steel stem, which supports a pipe-framed operator's station. Also carried on the turntable are two motor-driven shuttles that can be sent out and retrieved on any given floor. Electronic instructions are relayed to the shuttle through a control cable that trails behind it. A button-studded panel is the keyboard for the operator, who directs movements of both shuttles and elevator. One unusual feature is that he can move the elevator horizontally and vertically at the same time.

Automobiles entering the garage are guided by steel curbs to the point of loading. The lift picks up its four-wheeled cargo by sending out one of its shuttles to a position under the car. The operator raises the shuttle to lift the car slightly off the ground, then retrieves it, bringing auto and shuttle on to the lift. The elevator can now be raised to the parking floor desired and the shuttle sent out to deliver its cargo and return.

In reversing the process—returning cars to customers—if one auto is blocking another, the procedure is simply to pull the offending car on to the turntable, turn it halfway around. The operator then retrieves the car he wants, turns the lift halfway around again, puts back the blocking car, and descends to the ground floor.

According to Parkmaster Systems, Inc., Spokane, Wash., the firm that manufactures and markets the unit, the Parkmaster can be operated on a lot only 25 ft wide. It is also adaptable to lots of many different shapes. The firm recommends 700- to 800-ft lots as most economical, although none are now being built that are that large. Garages can be built of steel, cast-in-place concrete or by the lift-slab method, and the manufacturer estimates they can be built for $1,250 to $1,450 per stall not including land costs.

Parkmaster Systems, Inc., sells its units outright. The firm also will survey a proposed site, assist in layout and planning, help locate a good architect, and assist local engineers in installing the unit. Parkmaster does not intend to build garages or install units themselves. Once built, a 300-car lot can be run by five men during peak periods.

The novel unit is the brainchild of Spokane builder, William J. Porter, who has been toying with the idea for

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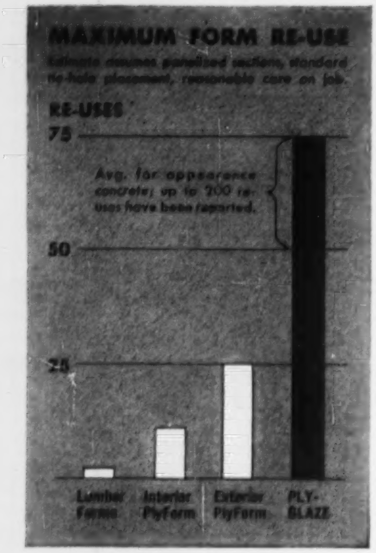
WASHINGTON

TURNTABLE after retrieving a car on one of its two electric shuttles.



**50 to 75 is a good average, but with care you can get up to . . .**

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PlyGlaze's tough, hard surface stands up indefinitely under repeated concrete pourings. PlyGlaze forms are worn out only when the panels are cut into unserviceably small pieces. With proper design and care you should get 50 to 75 re-uses. Actually, *over* 200 have been obtained—even then PlyGlaze continues to form good-looking concrete.

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Another member of the famous Tree Life Family of Forest Products
Hard, glossy-smooth wear resistant fused resin-fiber surfaces.
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Top-quality Exterior plywood (EXT-DFPA). Standard panel sizes.

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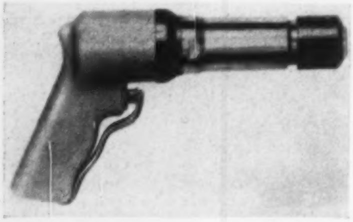


## 2,200 Strikes Per Minute

A 4-lb air hammer just announced is said to deliver 2,200 blows per minute at less than 80 psi air pressure. Designed for one-hand operation, according to the manufacturer, the tool is suitable for heavy cutting, chipping, chiseling or grooving. The various working heads used with the hammer can be locked in six different positions. Superior Pneumatic & Mfg. Co., 4758 Warner Rd., Cleveland, Ohio.

thirty years. Much of the original design was by tramway builder Royal Riblet, also of Spokane, from whom Parkmaster purchased patents in 1953.

Sole manufacturer is General Machinery Co., Spokane, Wash. K. K. Lowe, Inc., Fresno, Calif. is the franchised distributor for California and Nevada. Overall U. S. distribution is by Parkmaster Systems, Inc., Spokane, Wash. with Parkmaster Systems, Ltd., Vancouver, B. C. handling Canada.

## Polished Zinc Coat Lasts Lifetime on Steel Windows

Steel windows finished by the Fenlite process don't need painting ever, according to the developers of the process. Pinholes and scratches in the corrosion-resistant alloy-bonded zinc coating heal themselves by sacrificial action of the metal. And for looks, the surface is chemically polished to a high luster. Cost is said to be no more than ordinary steel windows with two coats of paint. The finish is available on all Fenestra windows. Fenestra, Inc., 3195 Griffin St., Detroit 11.

## Announce New Wide Blade For Caterpillar Model

A new 104-in.-wide bulldozer blade attachment for the No. 977 Traxcavator is now available. Owners can select the most suitable of two different dozer arrangements for the 977—a new straight bulldozer blade attachment and the previously introduced angling blade bulldozer. The blade attaches to the lift arms with a bracket arrangement. Caterpillar Tractor Co., Peoria, Ill.

## Lead-Core Copper Flashing Resists Acids and Alkalis

A new laminated flashing, called type B Cop-R-Flash, combines copper with a lead core. The manufacturer states that the two metals complement each other so that neither acid nor alkali can corrode the flashing.

The flashing—said to be extremely pliable—is reinforced with 5 plies of asphalt, 4 plies of special covering, and 2 plies of glass-fiber reinforcing. Pliability of the lead core is reported to eliminate the danger encountered with heavy-gage copper where hairline cracks can develop and draw in water by capillary action.

Other advantages given for the flashing include low cost, easy lapping with mastic, and effective interlocking by bending. Manufactured in 40- and 60-ft rolls, 60 in. wide, the product comes ready to use. Thicknesses of 0.002, 0.003, 0.004 and 0.007 in. are available. Phoenix Building Products, Inc., 3133 N. Broad St., Philadelphia 33, Pa.

## Lorain MC530W Carries 170-Ft Stick

A 35-ton Moto-Crane, Model MC-530 W, has been added to the Lorain line of power shovels and cranes.

Adaptable to crane, clam, dragline or hoe operations, the machine carries a square-tubular chord boom which can be extended to 110 ft in the standard base and up to 130 ft in a wide base. Two-piece tip extensions are made which will add 30 and 40 ft to either boom type.

A "Shear-Ball" turntable mount is said to eliminate all adjustment and maintenance of center pins, center-pin nuts, top or bottom rollers.

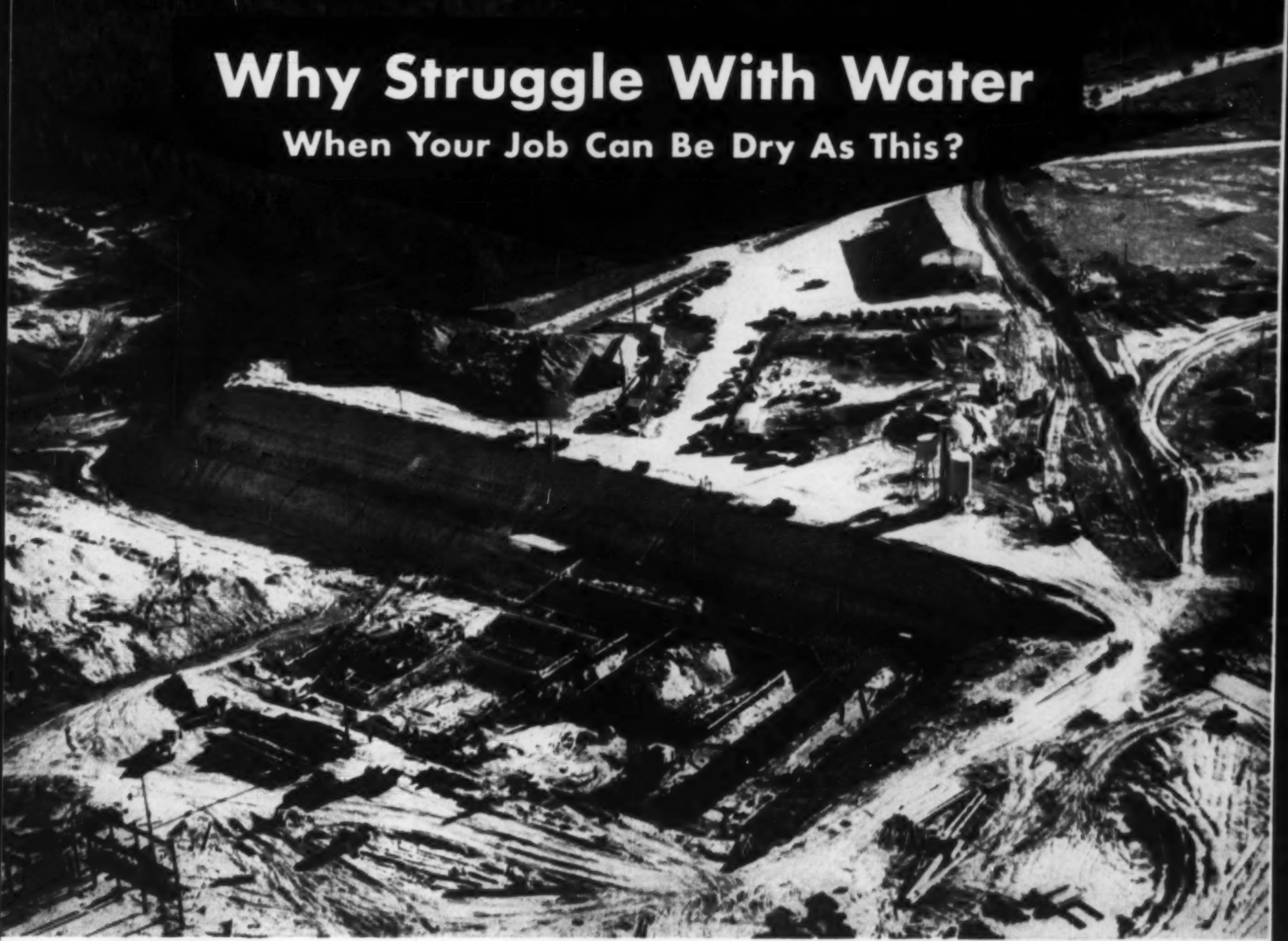
The rubber-tired carrier, powered by either gasoline or diesel engines working through 10 or 15 speed transmissions, is claimed to have over-the-road speeds up to 37 mph. Axle arrangements of 6 x 6, 6 x 4, or 8 x 44 are available.

Also available is the turntable of the MC-530, mounted on a single-engine self-propelled carrier, Model SP-530. This rig has dual front wheels, single control panel, and 4 speeds in both directions up to 8 mph. Thew Shovel Co., Lorain, Ohio.

*(New Products continued on page 72)*

# Why Struggle With Water

## When Your Job Can Be Dry As This?



Pumping Contractors: American Dewatering Corp., New York, Houston, Texas

The economic importance of getting a wet job off to a good dry start is thoroughly understood by Mississippi Power Co., Gulfport, Miss. Faced with the problem of handling 23′ of water in clay, sand and silt on this deep power plant foundation, they lost no time in installing a dependable MORETRENCH WELLPOINT SYSTEM which:

1. **Immediately gave them a workable dry job.**
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A good start on any project is half the battle. *On a wet one, it's a necessity!* That's why successful contractors pump with MORETRENCH.

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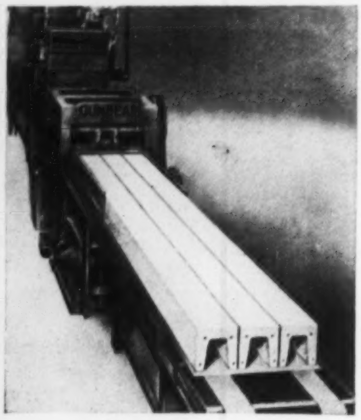


## Machine Extrudes Concrete In Many Shapes and Sizes

Called "Dunbeam", this machine literally squeezes out concrete like toothpaste out of a tube. And it can be adapted to extruding cored slabs, flat slabs, I-beams, T-beams and copings as well. It can also produce tongue-and-groove edges.

Fresh concrete is fed into a hopper and densely compacted by a combination of vibrating, rotary tamping, and mechanical trowelling. The finished product emerges, discharged at speeds up to 6 fpm.

The device produces shapes up to 24 in. wide or in multiples according to the sizes. Thus, there can be two 12-in. units, three 8-in., or such combinations as total 2 ft. Maximum height is 8 in. W. E. MFG. CO., 305 W. 24TH ST., HOLLAND, MICH.

## Electronic Truck Weighing Systems Ready After Tests

After field testing prototype models for more than a year, Taller & Cooper, Inc. is now marketing two electronic truck weighing systems—one for dynamic weighing and the other for static loads.

Both systems consist of an electromechanical weighing platform and an electronic output system which can be located remotely. The electronic unit can be equipped to automatically compute net weight, total weight, and

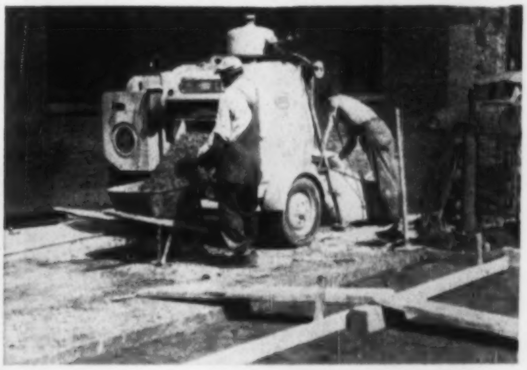
(*Continued on page 74*)

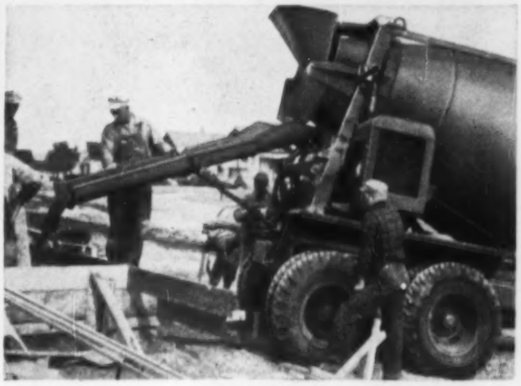
## Truck Series for Highway Maintenance

A new heavy-duty all-wheel drive truck series designed for gravel hauling and highway maintenance is now available from the Oshkosh Motor Truck Co.

The model shown below is designated "45-55JT" and is an adaptation of the Oshkosh 50-50 ready-mixed concrete carrier with the engine cantilevered over the front axle. Powered by a Continental 427-cu-in. gasoline engine or a Cummins diesel engine, the trucks have an 8½-cu-yd gravel dump body, carry a payload of 18,000 lb on the front axle and are built for mounting an under-body blade for road-grading work or a large sander body in conjunction with the under-body blade for winter road maintenance and ice control.

A short wheelbase of 144 in. and power steering are said to give extra maneuverability. OSHKOSH MOTOR TRUCK, INC., OSHKOSH, WIS.





# REX® Is Your Profit-Wise Choice

## ...in Pumps...in Building Mixers...in Truck Mixers

Rex Speed Primers are the "pumps that never let you down." Only Rex has the exclusive adjustable air peeler that assures new-pump efficiency for the life of the pump. Simple design ... easy accessibility... light weight make Rex your choice for dependable pumping service. Capacities from 4,000 to 90,000 g.p.h.

Rex Building Mixers alone give you the correct basic design for fast charging and discharging. Rex tows much easier... spots much faster... and has the true operator convenience that really cuts down fatigue ...means more yards per day. In 3½-S Tilter and Skipper models... 6-S, 11-S and 16-S models.

Rex Adjusta-Wate Moto-Mixers® have the unique design principle that adds up to biggest profits. The Adjusta-Wate principle offers the flexibility that reduces hauling, operating and delivery costs. And Rex Moto-Mixers always mix and deliver quality concrete regardless of slump. 3½-, 4½-, 5½-, 6½-, and 7½- yard models.

## ...and, for Pavers and Pumpcrete®, too,

FOR INFORMATION, WRITE CHAIN BELT COMPANY, 4633 W GREENFIELD AVE.,
MILWAUKEE 1, WISCONSIN

CONSTRUCTION REX MACHINERY

CHAIN BELT COMPANY

**New Optical Plummet Built into Gurley Transit Saves Set-up Time, Improves Accuracy on Windy Days**

Years ago, Gurley introduced lightweight instruments to combat wind vibrations Now Gurley further beats the wind problem with an optical plummet *built into* the instrument.

The new Gurley Optical Plummet Transit eliminates swing and sway of the cord and plumb—always time-consuming and exasperating on a windy location, and inaccurate as well. Positive accuracy of set-up is assured with the Gurley Optical Plummet.

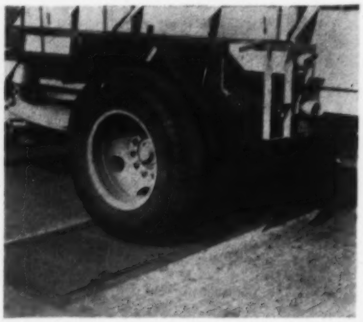
The new Gurley transit is furnished with a tripod with built-in shifting head, and allows a two-inch shift of the instrument over the point. This provides greater latitude in initial set-up.

Gurley's new Optical Plummet Transit offers one of the advantages of the optical-reading theodolite *plus* the desirable features of simplicity and universal acceptance of the American transit. For further details, write for Bulletin OP-57.

GURLEY

**W. & L. E. GURLEY** Union Plaza, Troy, New York

*Gurley—Since 1845*



other information, and can be provided with an oscillograph indicator, printing recorder and various alarm circuits.

The weighing platform for model ES-41, for dynamic axle loads, contains hermetically sealed weight sensing cells which operate on an electrical resistance principle: axle loads depress a conductor in an electrical field which changes the amount of current passing through. Response is within 20 milliseconds. With the electronic computing system, the scales can be unattended under all conditions. Model ES-41 can accommodate axle loads up to 40,000 lb.

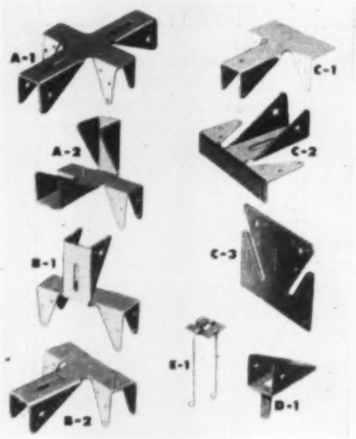
For precision weighing to within 0.2% of static loads, either an axle or an entire vehicle, model ES-51 is available. It employs strain gages to measure slight movements of a steel column put under tension by the applied load. Response time is 5 seconds. Loads up to 300,000 lb can be handled.

Advantages claimed for both new weighing systems are freedom from maintenance and long-term accuracy under rugged service, as compared with common lever-type scales. Taller & Cooper, Inc., 75 Front St., Brooklyn 1, N. Y.

## Truck-Mounted Borer Swings Over 180-Deg Arc

A truck-mounted earth boring machine with a hydraulic turntable base and swivel action is available.

The hydraulic extension action is said to give the borer an extra 22-in. reach within its operational radius of 120 deg. The machine is said to be capable of digging holes from 9 to 36 in. in diameter up to 10 ft in depth in any soil and at any level. On utility jobs, the earth borer can also be equipped to set poles by attaching an integral winch and derrick apparatus to the machine, handling poles from 40 to 45 ft in length and 2,000 to 2,500 lb in weight. Highway Trailer Co., Edgerton, Wis.



## Framing Fasteners Fit Wide Variety of Joints

There is hardly a joint in a wood frame building that can't be fitted with one or another of the nine types of Timbergrip Framing Fasteners. Fabricated from either 16- or 20-ga galvanized steel, the fasteners are shaped as saddles, brackets, hangers, plates and other forms to fit members framing into or hanging from one another or other supports. The various flanges and tabs are punched for nails, the object being to eliminate toe-nailing and to subject nails to shear loads rather than withdrawal forces. Columbus Engineering Co., Division Habco Mfg. Co., Columbus, Nebr.

## Adapt Loader, Back-hoe To Gas Model Tractors

Adaption of the Davis loader and back-hoe for the new International 300 utility LP gas model tractor is announced by Mid-Western.

The standard models of the Davis equipment were readily fitted to the new tractor because they require no bracing that fits across the top of the tractor where the LP gas tank is installed. This means that the loader and back-hoe installation will not require any additional mounting brackets or extra bracing.

The Model 102 loader features an 11-cu-ft material bucket with multiple attachments for extreme versatility. The back-hoe has a right angle digging feature for tractor-mounted back-hoes, an operator seat and controls that revolve with the boom, an extra wide frame and will dig 13 ft deep at any spot on a 180 deg arc. Mid-Western Industries, Inc., 1009 S. West St., Wichita, Kan.

Flag House Courts, Housing Authority of Baltimore, Md. Architect—Alexander S. Cochran
Assoc. Architect—Wrenn, Lewis & Jencks
Contractor—Sun Construction Corp.
Form Work—Adjustable Forms, Inc.

**Because it leaves a smooth surface...**

**MASONITE *Concrete Form* PRESDWOOD**

**Cuts rubbing time to the minimum**

When the forms are stripped, concrete poured against Masonite Concrete Form Presdwood® is ready to paint. On Flag House Courts, Baltimore, Maryland, 415,000 sq. ft. of exposed ceilings of floor slabs were quickly made ready for a smooth, long-lasting paint job. Hand rubbing was cut to the minimum.

These dense, grainless panels can be used again and again. Less money is tied up in form costs. They are easy to cut and fit with ordinary carpentry tools. They can even be bent to form arches. In 4' widths and lengths to 12', they're easy to handle. Send the coupon for a free sample.

**You Can Cut Costs 3 Ways!**

1. Screen side to concrete—for unpainted surfaces. Tiny projections left in concrete cut hand-rubbing costs up to 50%.
2. Screen side to concrete—for painted surfaces. The textured surface left in concrete forms an excellent bond for paint. Only minimum rubbing required.
3. Smooth side to concrete—for painted or unpainted surfaces. Rubbing virtually eliminated. No knots, grain or blemishes in Masonite Presdwood to mar the finished concrete surfaces.

**SEND FOR FREE SAMPLE!**

MASONITE
PRESDWOOD PRODUCTS

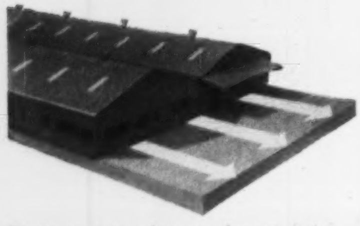
MASONITE® CORPORATION
Dept. ENR-920, Box 777, Chicago 90, Ill.

**Please send me a sample of Concrete Form Presdwood and your free booklet on cutting costs three ways.**

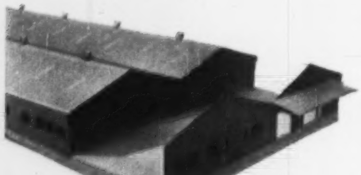
*Name*............................................
*Firm*............................................
*Address*.........................................
*City*.................... *State*...................
*Zone*...... *County*..............................

*Don't stunt your business growth*

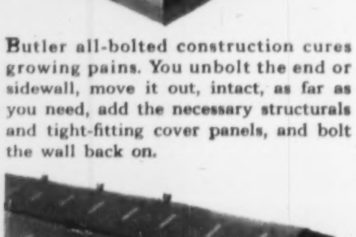
**Build with Butler**
***—the building***
***that is easy***
***to expand***



**Business expansion can be expensive—if it's not planned for. But when you choose a Butler building, you get "built-in" provision for expansion . . . fast . . . in any direction . . . usually at lower cost than initial construction.**



**Butler all-bolted construction cures growing pains. You unbolt the end or sidewall, move it out, intact, as far as you need, add the necessary structurals and tight-fitting cover panels, and bolt the wall back on.**



**Neat . . . fast . . . no strain . . . no waste. A minimum of new materials required. Need more space later? Do it again. There's no limit. It's just one of the reasons why Butler is your best building buy. Your Butler Builder can give you many others.**

Consult the yellow pages of your telephone directory for name of your Butler Builder, or write on your company letterhead for informative brochure.

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STEEL PRODUCTS

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Manufacturers of Steel Buildings • Oil Equipment
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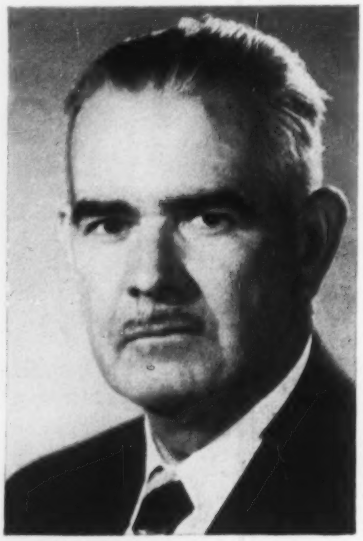
Burlington, Ont., Can.

# Men and Jobs



## Gen. B. B. Talley Joins Raymond Concrete Pile

Brig. Gen. B. B. Talley (USA ret.) has been appointed project manager for Raymond Concrete Pile Co. He will direct construction operations in foreign countries.

General Talley is a graduate of Georgia School of Technology, Army Engineer School and National War College. For the past year, he has been Division Engineer, Mediterranean Division, Corps of Engineers, with headquarters in French Morocco, in charge of construction of Air Force bases in North Africa and the Middle East, and construction in Pakistan and Iran.

## Prof. E. J. Squire Retires; 46 Years at Brooklyn Poly

Prof. Edward J. Squire, head of the civil engineering department at Polytechnic Institute of Brooklyn, N. Y., retired Sept. 1 after 46 years with the school's faculty.

Pending appointment of a successor, the department will be directed by a four-man committee headed by Dean Charles E. Schaffner.

A consultant as well as a teacher, Squire participated in the planning and design of the Trans-Arabian Pipeline, pumping stations for the Big Inch and Little Inch pipelines, ventilation buildings for the Holland Tunnel, and utilities for the town of Oak Ridge, Tenn. His work for the armed forces included tests of merchant and naval craft for the U. S. Navy and studies of concrete radar towers for the U. S. Air Force. He also served as consultant to the Borough President of Manhattan and the NYC Public Service Commission.

A life member of the American Society of Civil Engineers, Squire is also a fellow of the American Association for the Advancement of Science, fellow of the New York Academy of Science, and member of the Society of American Military Engineers, American Society of Photogrammetry and American Society for Engineering Education. Numbered also among his professional distinctions are four foreign awards, including the Cross of Knight, of L'Ordre des Chevaliers de la Croix de Lorraine.

Squire graduated from Brooklyn Poly in 1910 and joined the school's faculty the same year. He was appointed assistant professor in 1917, associate professor in 1924, professor in 1926 and head of the civil engineering department in 1938.

Although he will retain a limited connection with the institute,—teaching structural courses in the graduate school at night—Squire will be associated full time, as consulting engineer and vice president, with Lockwood, Kessler & Bartlett, Inc., civil engineers and surveyors, Syosset, N. Y.

## Linsky Named as Director Of Pollution Control Unit

California's newly formed Bay Area Pollution Control District has appointed Benjamin Linsky as its director. The $15,000-a-year post carries the responsibility of checking air pollution in San Francisco, San Mateo, Alameda, Contra Costa, Marin and Santa Clara counties.

Linsky, 45, served as director of Detroit's air pollution control board for the last five years and is president of the National Air Pollution Control Assn. He holds a BS degree from Wayne University and a master's degree in mechanical engineering from the University of Michigan.

## Robert S. Rowe Named Duke C. E. Dept. Head

Duke University announces appointment of Robert S. Rowe as chairman of its department of civil engineering. Rowe comes to Duke from Princeton, where he was an associate professor of civil engineering.

An engineering graduate of the University of Delaware, he did graduate work at Columbia and Yale, receiving the M.S. degree from Columbia in 1949 and the M.E. and Doctor of Engineering degrees from Yale in 1950 and 1951.

Prof. Rowe is a registered professional engineer and has published a number of technical papers on structural analysis.

## Clark Takes Command of Atlantic Fleet SeaBees

Capt. Henry G. Clark, 47, assumed command of the naval construction battalions of the Atlantic Fleet, including units handling construction in the scientific outposts of the Antarctic. He has been Assistant Chief for Construction and Real Estate in the Bureau of Yards and Docks since June 1954.

Captain Clark is a 1930 graduate of the Naval Academy.

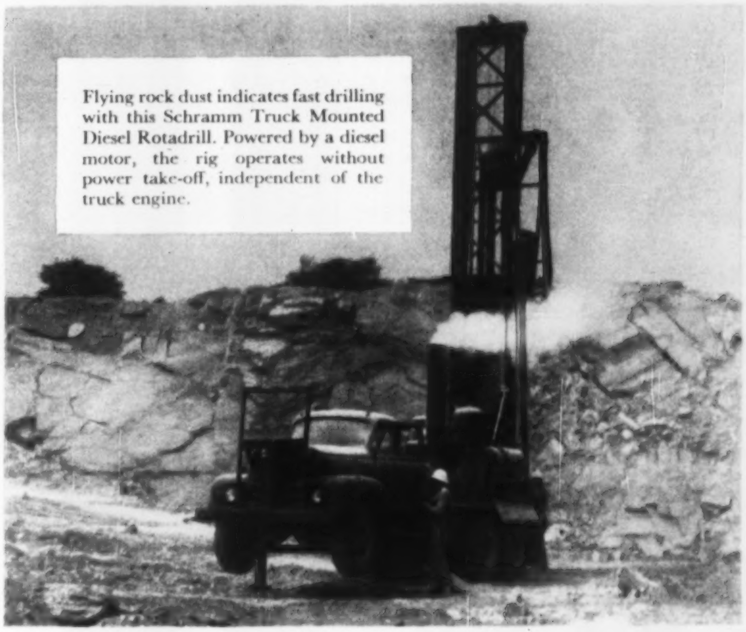
## Men and Jobs Briefs . . .

- **Careers**—The Saint Lawrence Seaway Development Corporation appoints **L. W. Angell** as director of the proposed Engineering and Maintenance Division, **Raymond F. Stellar** as director of the Marine Operations Division and **L. M. Hale** as director of the Special Operations Division. All will be headquartered at Massena, N. Y.

**Arthur Rynders,** assistant city engineer at Milwaukee, Wis., is named waterworks superintendent. He replaces **Edward F. Tanghe,** who retired earlier this year.

- **Business**—The Stone & Webster Engineering Corp. of New York, N. Y., appoints **Donald N. McCord** as construction manager . . . **G. Edward Elsenhans** is named technical service engineer for the Dragon Cement Company, Inc., New York, N. Y. . . . Former Navy captain **Richard L. Mann,** CEC, joins the architectural firm of Gamble, Pownall and Gilroy of Fort Lauderdale, Fla. as coordinator of administration and planning.

- **Retirements**—**George R. Schneider,** chief of the Engineering Division, Little Rock District, Corps of Engineers, after nearly 25 years of government service . . . **John F. Reynolds,** partner in the firm of Reynolds, Smith and Hills, architects and engineers, Jacksonville, Fla., after many years of service to the industry.



Flying rock dust indicates fast drilling with this Schramm Truck Mounted Diesel Rotadrill. Powered by a diesel motor, the rig operates without power take-off, independent of the truck engine.

NEW TRUCK MOUNTED DIESEL ROTADRILL . . .

You get diesel powered drilling without investing in a diesel truck

You don't need a costly diesel truck to transport and power the new Schramm Truck Mounted Diesel Rotadrill. Mount it on any suitable gasoline driven truck and save money on every drilling job.

Diesel Rotadrills have their own UD-1091 International Diesels to drive the air compressor and all auxiliary equipment. This gives you several advantages. Gasoline is used only for transportation. You get the economy of lower cost diesel power for drilling operations without having to buy an expensive diesel truck. And being independent of the truck engine, the Rotadrill needs no adaptation to the power take-off, which varies in different trucks.

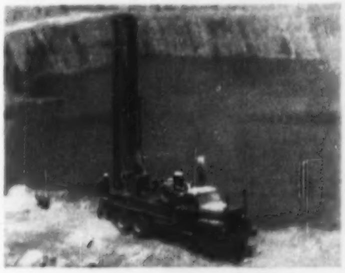
With either the gas driven or diesel powered Rotadrill, you get the same advantages: safe, speedy travel—quick, easy set-up—fast, clean drilling. Our Bulletin TMR-56 tells all about the features and economies of Rotadrills. Write today for your free copy or call your nearest Schramm dealer.

*Your local Schramm Dealer is listed in the Yellow Pages of your telephone directory.*

Schramm, Inc.

MANUFACTURERS OF AIR COMPRESSORS

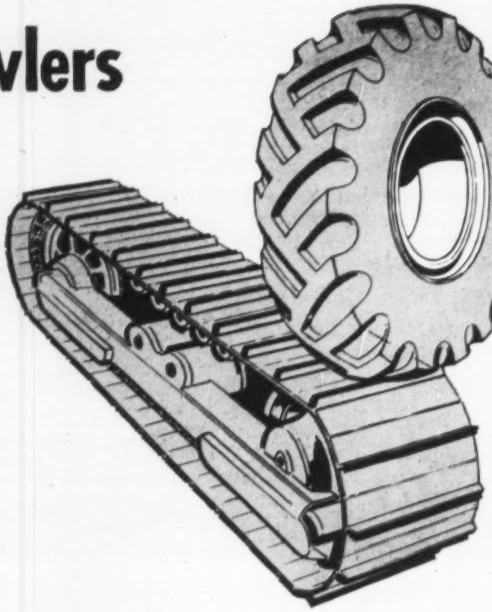
620 North Garfield Ave. West Chester, Pa.



Schramm Truck Mounted Rotadrill drives right to the drilling site—is ready for work in minutes. Simply lower the outriggers, raise mast, attach drill bit and pipe—and you're ready to make hole.

Heavy welded structural steel mast, raised and lowered hydraulically, travels on crotch between jobs. Drilling controls are located adjacent to the mast for easy, one-man operation.

# There's a place for crawlers and a place for rubber



**in meeting your dirtmoving problems.**

1. **Larger job yardage**
2. **Increased job area**
3. **Earlier completion dates**
4. **Higher labor costs**

Crawler tractors fit your applications where lugging power is a maximum requirement. They have maximum efficiency in limited-area operation. Here their traction advantage at low speeds can offset their speed limitations on medium or long-range cycles.

Rubber-tired tractors fit your applications where speed and mobility become important dimensions in your dirtmoving problem. The longer your cycle the greater the importance of speed that only rubber-tired tractors can give. You also need rubber-tired mobility where frequent moves from one assignment to the next, or from job-to-job, are involved. Where you have long cycles and/or frequent moves, crawler limitations give you a severe handicap in both time and cost.

With over ten years of experience and development behind it, our improved rubber-tired Tournatractor, can meet your need for dependable performance, with a minimum of competent regular maintenance. Operation is easy and safe. When inspection or re-

Filling around large culvert, 17 mph rubber-tired tractor moves dirt fast. Tournatractor's travel speed and flexibility of application enables you to expedite scattered job assignments that need to be done in a hurry.

pairs are necessary all parts are easily accessible and can be replaced quickly and simply.

Take a new look at the modern Tournatractor. Study it from the angle of your assignments where you need new standards of speed and mobility. Remember, these two dimensions will become even more important in the big highway programs ahead. Study your crawler cycles, but not just on basis of the biggest load in the shortest distance. Measure in *time* rather than *distance.* Measure load-time, carry-time, return-time. Find out the percentage of time you lose in moving from one assignment to the next.

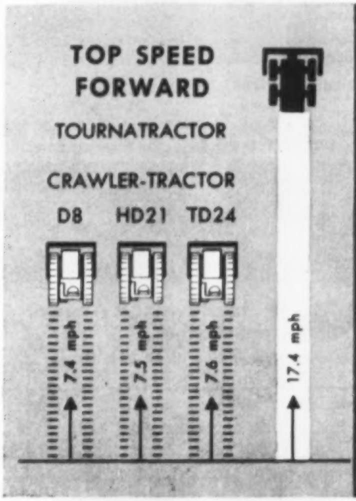
You measure production on your scrapers, your shovels, your pavers, your drills. It's also important for you to carefully study the one major tool you've probably taken for granted . . . your tractor. To be sure, yardage measurements are impossible on most of their production . . . but you can definitely time their moves and cycles over a substantial period; to your advantage.

We'll be glad to help you set up these studies if you wish. Then, when you know just what you are now getting in tractor performance, we'll be glad to show your time-study man similar operations on Tournatractor. We think the answers on the present-day Tournatractor will justify your trying at least one on your current jobs. Time-studies on assignments calling for speed and mobility will show you a big advantage in productive time . . . more work done . . . lower costs . . . greater profit.

But don't take our word for it . . . check for yourself.

Tournatractor—Trademark Reg. U.S. Pat. Off. CT-1103-G

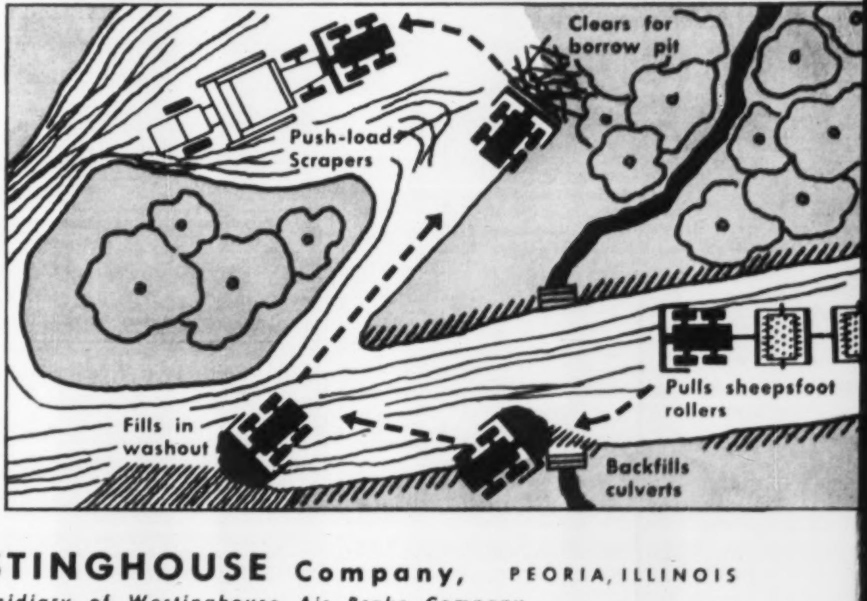
Push-loading is an important job where rubber-tired speed pays off. Tournatractor's ease-of-operation and maneuverability allow fast positioning, gear-shifting is faster, new optional wide-base tires plus hydroflation give improved performance. Mobility permits pusher transfer to match loading need.



| Work | Operation | Time (minutes) | | |
|---|---|---|---|---|
| | | Average Crawler | Rubber-Tired Tractor | Speed Saved in Min. |
| Dozing | Pushing load . . 150 ft.<br>Return . . . . . . . . 150 ft.<br>Gear changes . . . . . . | 0.86<br>0.36<br>0.30 | 0.57<br>0.21<br>0.10 | |
| | TOTAL | 1.52 | 0.88 | 0.64 |
| Pulling 15-yd. Scraper | Loading . . . . . . . . . . . .<br>Hauling . . . . . 1000 ft.<br>Spreading . . . . . . . . .<br>Return . . . . . . 1000 ft.<br>Gear changes . . . . . . | 0.75<br>2.10<br>0.40<br>2.10<br>0.30 | 1.25<br>0.76<br>0.40<br>0.63<br>0.10 | |
| | TOTAL | 5.65 | 3.14 | 2.51 |
| Push-loading | Loading . . . . . . . . . . . .<br>Return . . . . . . . . . . . .<br>Gear changes . . . . . . | 0.85<br>0.42<br>0.30 | 1.10<br>0.21<br>0.10 | |
| | TOTAL | 1.57 | 1.41 | 0.16 |
| Pulling 20,000# Roller | 600-ft. cycle travel . .<br>turns . . . . . . . . . . . . | 3.40<br>0.30 | 2.72<br>0.30 | |
| | TOTAL | 3.70 | 3.02 | 0.68 |

Tournatractor travel-speed advantage is shown above. Chart compares Tournatractor's top speed with those of 3 crawler-tractors in its size range. Diagram below shows why EVERY spread needs at least one Tournatractor as a trouble-shooter. In less than 5 minutes this 17 mph rig can be at work on a new task a mile down the right-of-way. It can handle 9 one-hour assignments averaging a mile apart in a single 10-hour day.

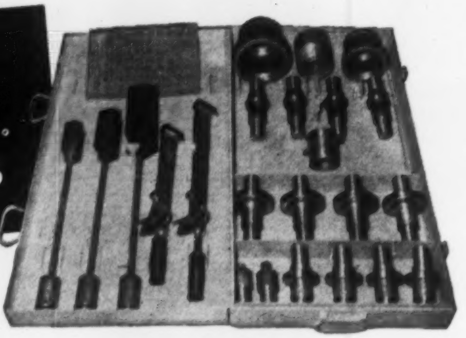
*Figures computed from manufacturers' specification sheets available to us at time of printing.*



**LeTourneau-WESTINGHOUSE Company,** PEORIA, ILLINOIS

*A Subsidiary of Westinghouse Air Brake Company*

ARBA See you at the ROAD SHOW • Chicago • January 28-February 2, 1957



"IN-PLACE" SHEAR READINGS

**FAST, ACCURATE, WITH NEW ACKER VANE TEST KIT!**

The Acker Vane Shear Test Kit has everything needed to obtain fast, accurate, "in-place" shear readings to depths of 100 feet!

It's easy to use and provides accurate soils information at low cost! For ease in carrying, the entire set of tools are packaged in a handy steel kit.

Write today for prices and free illustrated folder 700! ENR

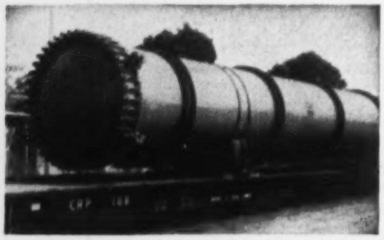
Assemble the Vane to the Rod!

Insert in Casing and Apply Pressure to the Torque Wrench!

Consult the Torque Chart for Accurate Reading!

**ACKER DRILL CO., INC.** 725 W. Lackawanna Avenue
Scranton, Penna.

*a complete line of Soil Sampling Tools, Diamond and Shot Core Drills, Drilling Accessories and Equipment*



**TIMBER-TREATING CYLINDERS**

- Whatever your needs in pressure vessels—creosoting cylinders, bubble towers, gas scrubbers, pressure spheres, gas storage tanks, etc.—you can depend on COLE for vessels that are *correct* in design and permanently leakproof at the welded or riveted joints.

We also design and fabricate elevated tanks, acid tanks, dye-vats, digestors, standpipes, storage tanks, etc. Write for latest COLE catalog—*Tank Talk.*

*Established 1854*

R. D. COLE

- TANKS
- TOWERS
- CYLINDERS
- VESSELS
- STANDPIPES

**Manufacturing Co., Newnan, Ga.**

**PHOENIX BRIDGE COMPANY**

**Engineers—Fabricators**
**Erectors**
**Structural Steel**
**BRIDGES and BUILDINGS**

General Office and Shops
PHOENIXVILLE, PA.

Subsidiary—Barium Steel Corporation

**GUNITE**
Since 1915
CONCRETE
SAND AND CEMENT
"Placed by Air"

We have the equipment, personnel and experience to complete any and all GUNITE work regardless of size or location.

*Send for specifications and bulletins*

**GUNITE CONCRETE & CONST. CO.**
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2016 WEST WALNUT, CHICAGO 12, ILLINOIS
3206 HOUSTON, HOUSTON 9, TEXAS
3545 LINDELL BLVD., ST. LOUIS 3, MO.
Milwaukee and Twin Cities · Denver · New Orleans

## Obituaries

**Louis Tolnay,** 54, died as the result of a heart attack Aug. 20. At the time of his death he was a citizen of Argentina, although he had lived in Los Angeles for several years. In Argentina he had been for a period of ten years chief engineer, hydraulic structure design department, of that government. At the time of death he was employed in the hydraulic power division of The Bechtel Corporation and was associated with Julian Hinds, consulting engineer, in arch dam design and analysis.

**Chester Nelson Reitze,** 73, civil engineer and industrialist of Seattle, died there Aug. 25. A 1905 civil engineering graduate of Cornell, he first was a partner in the Seattle engineering firm of Reitze, Storey & Duffy before becoming Pacific Coast manager of the Portland Cement Assn. He went to work for Superior Portland Cement, Inc., about 30 years ago, became the company's president before retiring in 1947.

**Thomas M. Howerton,** 70, for many years head of his own consulting engineering firm at Asheville, N. C., died recently. A civil engineering graduate of the University of Kentucky, he moved to Asheville in 1913, served for a time as county engineer, and then founded the Howerton Engineering and Construction Co., which he headed until his retirement two years ago.

**Henry F. Stubbs,** 62, a consulting engineer whose work had taken him throughout Central and South America and much of the United States, died recently at Durango, Colo. His long career included 16 years of service as an engineer for the United Fruit Co., the Frederick Snare Corp., and others.

**Charles H. Wood,** 87, retired New York State engineer, died Aug. 24 in Decatur, Ala. where he was visiting. Mr. Wood was with the New York State Public Works Department more than 30 years before retiring in 1940. He was considered a specialist in bridge design.

**Francis X. Bode,** 65, for more than 35 years an engineer for New York State, died Aug. 25 at Albany, N. Y. He was principal building construction engineer in the state architect's office. He also had been assistant engineer of Troy, N. Y.

Trimming back banks, 2½-yard shovel loads Rear-Dumps with 9 to 10 tons of granite and dirt, in an average of three passes. Loading time in this rocky going: about 1 minute 50 seconds.

# *"Can't be beat* for work in cramped quarters,"

## says supt. on mountain road job

To relocate four miles of dangerous, winding, one-way highway through the Sierra Nevada mountains in western California, Ball & Simpson, Berkeley, moved about 800,000 cubic yards of granite.

This job required sturdy haul equipment that would move rock fast during the summer months before snow closed roads for the winter. To handle this work, company drove in three, sure-footed, 28 mph D Tournapull Rear-Dumps.

### Work faster on mountain roads

Tournapulls' 90° turning ability, provided by instant-acting, easy-to-operate power steer, enabled these Rear-Dumps to spot for load and dump faster and more safely than could a conventional dump-truck.

Giant multi-disc four-wheel air brakes, with more brake surface on one wheel than most haulers have on all four, gave operators confidence to use Tournapulls' top speeds on steep, narrow mountain grades.

Says Operator Gordon D. Wood, "These Tournapull Rear-Dumps have good brakes that you can depend on to stop *right now*. Machines are easy to handle, too. They certainly get around good in narrow spots."

Because of Tournapull's advantages, each Rear-Dump was able to average 1000′ cycles in 4 minutes 10 seconds.

Superintendent E. E. Frost, said that, in the best production he could recall, each of the three Rear-Dumps hauled 200 loads 300′ down a steep grade, during one 10-hour day.

He describes this relocation job on the Sonora Pass Road as one of the toughest examples of rock road work he had ever seen. "Tournapull Rear-Dumps can't be beat. They are a wonderful piece of equipment for this type of work. Tournapulls run in and get under a shovel so much easier than a truck!"

### No major repairs in 3 years

During three seasons in the Sierra Nevada mountains, machines have experienced very little downtime, needed no major repairs. Although the three "D's" have been used more than 2500 hours each, original tires are still in good condition.

Why not check on what this power, speed, and production can do on your hauling jobs? Ask your LeTourneau-Westinghouse Distributor for owner-verified production figures on the size Rear-Dump best suited to your job . . . the 11-ton "D" . . . the 22-ton "C" . . . or the big 35-ton "B".

Tournapull dumps in ½ minute, including time maneuvering to edge of bank. "They're fast dumpers" says Operator Gordon D. Wood. Working a 58-hour week, Tournapulls hauled 75% of the material in this road relocation. Balance was moved by 2 crawler-scraper combinations and 2 crawler-dozers.

Rear-Dumps hauled granite-fill for relocation of 4 miles of mountain highway. The new, modern, two-way road, built under the direction of the Bureau of Public Roads, eliminates a narrow winding section of the Sonora Pass Road (State Route 108), between Dardanelle and Strawberry.

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**For further information write for Bulletin No. 701, IRONITE COMPANY, 208 South LaSalle Street, Chicago 4, Ill.**

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# Books

## Building Engineering

ARCHITECTURAL CONSTRUCTION—Second Edition, by Theodore Crane. 433 pp. John Wiley & Sons, Inc., New York, N. Y.; Chapman & Hall, Ltd., London. $10.

This book, which offers guidance in "making an appropriate choice for the structural portions of a building", has been thoroughly revised. It calls attention to many outstanding buildings that have been erected and new designs that have been developed since publication of the first edition in 1947.

It now discusses applications of prestressed concrete for structural framing, newer types of fireproofing and sandwich wall panels. Tables of useful data also have been updated.

## Miscellaneous Notes

**Minimum design loads**—Revised wind-load recommendations are the most important changes in the 1955 edition of American Standard Building Code Requirements for Minimum Design Loads in Buildings and Other Structures. First issued in 1945 under sponsorship of the National Bureau of Standards, and approved by the American Standards Association, the standards are a source of structural load data (snow, live, dead, earthquake, wind) for code-making bodies. The new wind-load recommendations are founded on U. S. Weather Bureau data rather than on conventional values of obscure origin. Included are suction effects, based on observation and laboratory experiments, and recommendations for loads on radio and TV towers. Available for $1.50, American Standards Association, 70 E. 45th St., New York 17, N. Y.

## New Engineering Books

FACTORY ELECTRIFICATION—by F. T. Bartho and C. H. Pike. 398 pp. Philosophical Library, Inc., 15 E. 40th St., New York 16. $12.00.

THE PETROLEUM REFINERY ENGINEER'S HANDBOOK—by J. F. Strachan. 168 pp. Philosophical Library, Inc., 15 E. 40th St., New York 16. $15.00.

1955 ASTM PROCEEDINGS—American Society for Testing Materials, 1916 Race St., Philadelphia 3. $12.00.

THE DESIGN OF STORM-WATER INLETS—193 pp. Dept. of Sanitary Engineering and Water Resources, The Johns Hopkins University, Baltimore 18, Md. $5.00.

THE GENERATION OF ELECTRICITY BY WIND POWER—by E. W. Golding. 318 pp. Philosophical Library, Inc., 15 E. 40th St., New York 16. $12.00.

THE MUNICIPAL YEAR BOOK, 1956—582 pp. International City Managers' Association, 1313 East 60th St., Chicago 37. $10.00.

A TREATISE OF SURVEYING, VOLUME ONE: INSTRUMENTS AND BASIC TECHNIQUES—381 pp. Philosophical Library, Inc., 15 E. 40th St., New York 16. $10.00.

ASTM STANDARDS ON LIGHT METALS AND ALLOYS—American Society for Testing Materials, 1916 Race St., Philadelphia 3, Pa. Price to members $2.65; nonmembers $3.50.

FOUNDATION ENGINEERING—by Rolt Hammond. 192 pp. Philosophical Library, Inc., 15 E. 40th St., New York 16. $10.00.

A SIMPLE GUIDE TO BLUEPRINT READING—With Applications to Aircraft—by William N. Wright. 120 pp. McGraw-Hill Book Co., 330 W. 42nd St., New York 36. $7.00.

## Reports and Pamphlets

A.I.S.C. NATIONAL ENGINEERING CONFERENCE PROCEEDINGS 1956—American Institute of Steel Construction, Inc., 101 Park Ave., New York 17, N. Y.

THE MECHANICAL PROPERTIES OF WROUGHT PHOSPHOR BRONZE ALLOYS—Special Technical Publication No. 183. American Society for Testing Materials, 1916 Race St., Philadelphia 3, Pa. $3.00.

ANNUAL MAXIMUM AND MINIMUM MEAN DISCHARGES OF THE MISSISSIPPI RIVER AND ITS OUTLETS AND TRIBUTARIES TO 1953—Office of the President, Mississippi River Commission, Corps of Engineers, U. S. Army, P.O. Box 80, Vicksburg, Miss. $1.00.

GEOLOGY OF THE BIGHORN CANYON-HARDIN AREA, MONTANA, AND WYOMING—Geological Survey Bulletin 1026. Superintendent of Documents, U. S. Govt. Printing Office, Washington 25, D.C. $4.00.

PLASTICITY AND WATER RETENTIVITY OF HYDRATED LIMES FOR STRUCTURAL PURPOSES—Building Materials & Structures Report 146. Superintendent of Documents, U. S. Govt. Printing Office, Washington 25, D.C. 15¢.

PROCEDURES FOR INVESTIGATION OF FISH KILLS—Ohio River Valley Water Sanitation Commission, 414 Walnut St., Cincinnati 2, O. 50¢.

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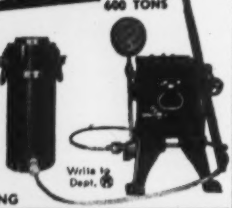

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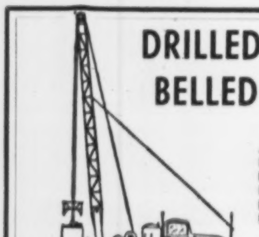

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## The Measure of Damages For Faulty Construction

When the performance of a contract varies from its terms, the amount of damages the owner can recover is a troublesome question. The expense of righting the wrong is not necessarily the test.

One approach to the problem was presented by a New York court which had before it a contract for the purchase of a house to be built according to the plans of a model house displayed by the builder. At the time the contract was made, the road in front of the site where the house was to be built had not been graded and the parties to the contract had assumed that the grade of the street would be higher than the grade that was actually used.

The contract called for construction of a garage with a bedroom over it and also for construction of a driveway from the street to the garage. At the time the purchaser took title to the house, the street in front of it had not as yet been graded. When the paving was put in by the town, its elevation was about two feet lower than the rough grade that existed at the time the contract was entered into. The contractor then graded and macadamized the driveway leading from the street to the garage.

The purchaser claimed that the slope of the driveway made it impossible to drive into the garage when there was a heavy rainfall or snow or when a car was parked on the opposite side of the street, and brought an action against the contractor to recover damages for breach of contract, claiming that the driveway as built had a slope of 22½% and that this grade had to be reduced to a grade of 12% before it could be used properly; that in order to make this change, it would be necessary among other things, to tear up the garage floor, excavate the rock underneath the garage floor, drop the garage floor four feet, nine inches, underpin the walls of the garage, make a new foundation, build a new driveway, and take care of the brick veneer outside the garage. His estimate of the cost of this was was $5,000.

The purchase price of the house was $16,470. The contractor claimed that the true measure of damages was not the cost of making the repairs but the difference between the value of the house as constructed and its value had it been constructed in conformity with the contract, or the cost of making the repairs, whichever is the lesser. The trial court refused to permit the

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Years of research by Keasbey & Mattison, insulation pioneers, have resulted in a new, highly efficient, pipe insulation made of lime and silica (hydrous calcium silicate) with asbestos fibers added for strength. It's called KaytherM and it's strong, light in weight, and easily handled and cut.

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| Modulus of Rupture, lbs./sq. in. | 65 |
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contractor to offer evidence to show the value of the house as constructed and instructed the jury that the purchaser was entitled to recover as damages the cost of making the necessary repairs. The jury rendered a verdict in favor of the purchaser in the sum of $5,000. This judgment was reversed on appeal,[1] the appellate court sustaining the contractor's contention and directed a new trial.

The appellate court stated: "In our opinion, such proof was erroneously excluded. The evidence should have been received, and the jury should have been instructed that if there was substantial performance of the whole contract on the part of the defendant (contractor) and the failure to perform was not in bad faith, and destruction and reconstruction were necessary to get a driveway as was agreed to be built, the jury could not allow the cost thereof if such cost would exceed the difference between the value of the premises as they were with the driveway as built and the value with a driveway as it hase been built." Many cases and authorities are cited to sustain this principal of law.

(1) Bellizzi v. Huntley Estates, 147 N.Y.S. 2d 74, Supreme Court of N.Y., Appellate Division, Dec. 19, 1955.

## Oral Changes in Contract No Bar to Suit on Bond

The fact that a written contract for federal construction has been changed orally has been held not to affect a subcontractor's right to recover under the payment bond secured by the general contractor.

In one case, a subcontractor sued the prime contractor and its surety to recover a balance he claimed was due him under the subcontract. The prime contract was one with the United States Government for reconstruction of a building owned by the government. The action was based solely on a government statute known as the Miller Act which provides, in substance, that any person who furnishes labor or material in the prosecution of the work provided for in a contract for the construction or repair of any public building, in respect of which a payment bond is furnished and who has not been paid in full, shall have the right to sue on the bond for the unpaid amount.

One of the defenses of the prime contractor was that the contract was executed in New York State, and the Personal Property Law of New York provides that a written contract cannot be changed by oral instructions where the contract, as does the one in the instant case, provides that no changes shall be made in the contract unless made in writing and signed by the party against whom enforcement of the change is sought. The action was brought to recover for extra work for which no written orders were given. The court granted the contractor a recovery, holding that the statute was not applicable to a subcontractor's claim under the Miller Act where a government contract was involved.[1]

(1) United States v. Krendel, 136 F. Supp. 276, U.S. District Court, Dec. 6, 1955.

## Contract May Limit Time In Which to File Claims

Parties to a contract may lawfully provide that neither can sue the other without first giving notice of the claim on which the suit will be based. The contract may specify a limited time for filing the claim, as long as a reasonable length of time is allowed.

In a case that arose in a federal court, for example, an engineer had been employed to work on construction projects in French Morocco, North Africa. The contract contained a provision which required the employee to give written notice of any claim arising out of the employment within 60 days after the claim arose, as a condition precedent to recovery. The engineer's employment was terminated on August 2, 1953, and the first written notice of claim by him was received from his attorneys on January 19, 1955, almost a year and a half later.

The engineer brought an action to recover damages for breach of contract. The employer asked the court to have the action dismissed on the ground that the employee had failed to give written notice of his claim within the time stipulated in the contract. The attorneys for the engineer claimed that the contract provision requiring notice of claim within 60 days as a condition to enforce claims under the contract was unreasonable and invalid. The court granted the application of the employer to dismiss the action.[1]

The court stated: "It is well settled that parties may validly contract for a notice of claim to be given within a stipulated period as a condition to the maintenance of suit. Murray v. Cunard S. S. Co., 235 N. Y. 162, 139 N.E. 226, 26 A.L.R. 1371. Such a stipulation is binding unless the specified period is unreasonable in all the circumstances."

The attorneys for the engineer claimed that the delay in giving the written notice was due to the fact that the engineer, according to an affidavit submitted by the attorneys, was absent from this country. The court held that this did not relieve the engineer from an obligation to give notice within a reasonable time.

The court also said: "Nevertheless, even assuming the invalidity of the 60-day limitation, the defendant (employer) is not thereby deprived of all protection against tardily presented claims. For if the stipulated term of notice were held to be unreasonably short, the plaintiff (engineer) would be entitled to an extension only so far as to sustain the validity of a notice actually given within a reasonable time. (Citing numerous cases.) The obvious purpose of the contractual limitation is to permit defendants (employers) engaged in a temporary and far distant project the opportunity of reasonably prompt investigation of any claims made, at a time when it is still practicable to do so. While such an opportunity must be balanced against the reasonable opportunity of plaintiff, similarly located far from home in a strange place, to make his claim, nevertheless, in any circumstances, a year and a half delay in presenting a claim must incline the scale in defendants' favor.

(1) Loundon v. Morrison-Knudsen Co., Inc., et al., 137 F. Supp. 642, U.S. District Court, S.D.n New York, Dec. 29, 1955.

## Municipal Contracts And Building Codes

An Illinois court has held that a contractor who loses a municipal contract because of noncompliance with the building code cannot sue the city for damages.

In that case, an action was brought by an electrical contractor against the building commissioner and the city to recover damages sustained when the commissioner, who had issued a permit for the electrical work, ordered that the work be stopped because it did not comply with the building code.

The action was dismissed and the dismissal was affirmed by the appellate court,[1] the court holding that the building commissioner, who issued the permit for the work, was acting in his official and governmental capacity in ordering that the work be stopped because it did not comply with the building code.

(1) Rafel v. City of Elmhurst, 134 N.E. 2d 121, Appellate Court of Illinois, May 3, 1956.

**(These summaries of court decisions are prepared by I. Vernon Werbin, New York attorney and civil engineer.)**

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A sidelight on this job was the excavation, crushing and stockpiling of 80,000 tons of rock for later use as subgrade for roadways.

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| MARION 101-M | 3 | —— | 84T @ 12′ | 57T @ 15′ | | 417-A |
| MARION 111-M | 4 | —— | 169T @ 12′ | 105T @ 15′ | | 402-C |

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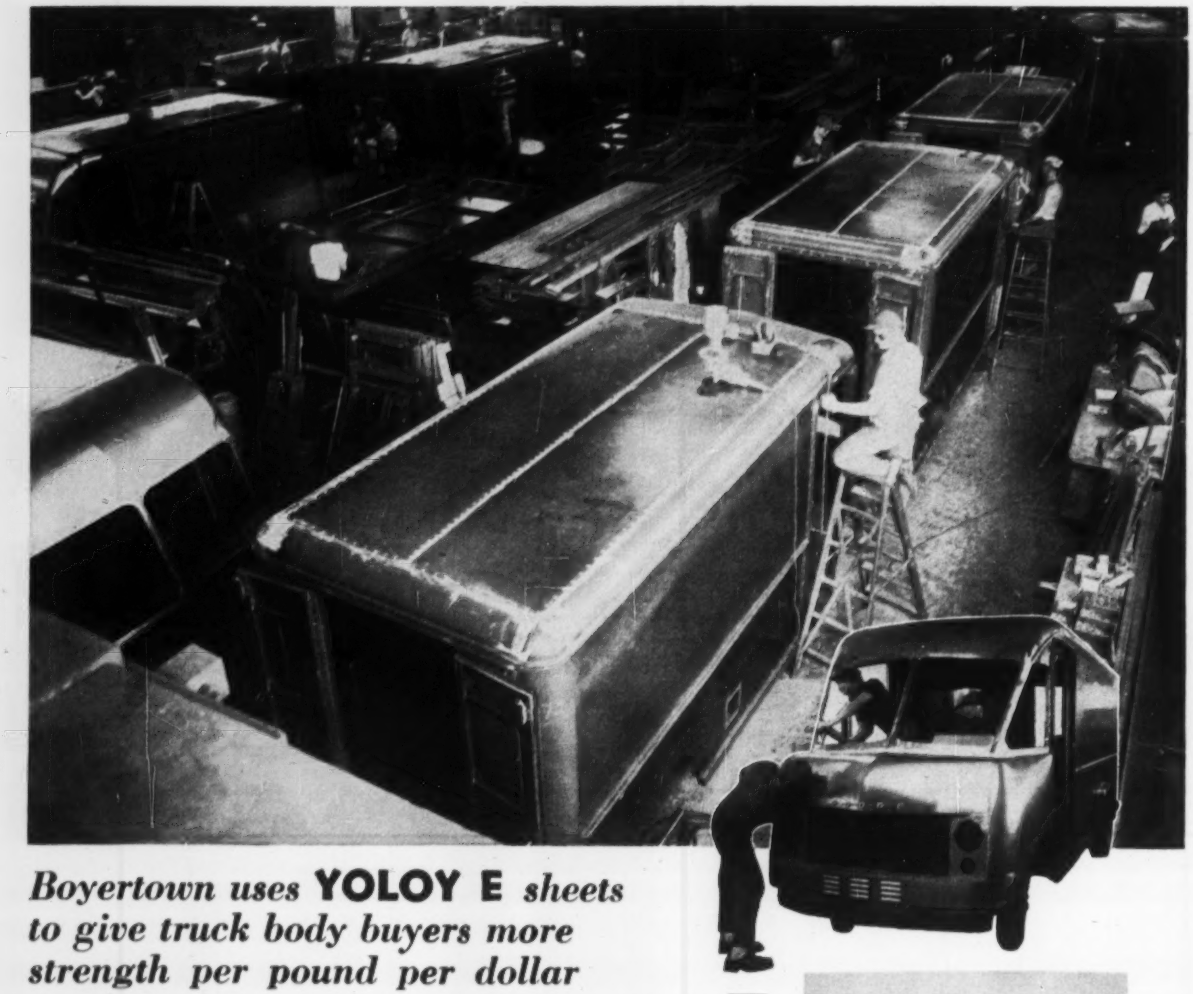

# *Boyertown uses* **YOLOY E** *sheets to give truck body buyers more strength per pound per dollar*

"More strength per pound per dollar" is the theme Boyertown Auto Body Works, Inc., uses to sell its delivery-type truck bodies. Chief contributing factor to this selling argument is the high-strength material of which the bodies are made—Youngstown Yoloy "E" Sheets.

Here is what Boyertown's own advertising says about Yoloy "E"—"It's light, strong and corrosion-resistant. It absorbs the punishing stop-and-go strains of day-in day-out dairy route driving with a minimum of maintenance. This corrosion-resistance and additional strength is a premium of longer life and durability at no extra cost."

Demand for Boyertown units is at an all time high. The Company is so confident of the future success of its Yoloy "E" built equipment that a new plant is now under construction which will increase production capacity some 40%.

Every body manufacturer—in fact, every builder of machines or equipment where extra strength, lighter weight and increased corrosion resistance are important—will be interested in the unusual properties of the Youngstown Yoloy Family of Steels. Get in touch with the District Sales Office that serves your area, or write the home office.

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**High in resistance to corrosion, shock and vibration, easy to fabricate, easy to weld.**

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# Unit Prices

## $1.3 Million for Aprons on South Dakota Airbase

Rigid and flexible pavement for three new aprons with shoulders at Ellsworth Air Force Base in South Dakota attracted only three bids. A. J. Ryan & Associates, Denver, Colorado, is consultant for the Omaha District of the Corps of Engineers.

The Peter Kiewit Sons Co., Sheridan, Wyoming, low bid of $1,275,341 is 16% more than the engineers' estimate for a reasonable contract price including profit, but it is 3.9% below the second and 6.1% below the high third bid. Higher unit and lump sum prices for 78% of the individual bid items pushed the contract price up to a total of $175,941 above the $1,099,400 estimate.

Work under this contract includes 72,000 sq yd of 19-in. rigid cement concrete pavement on a 4-in. granular filter course and 26,000 sq yd of flexible pavement with 5-in. to 11-in. subbase courses on 6-in. to 12-in. subbase courses. The contract also covers roadway pavement, aircraft fuel lines, electrical work, topsoiling and seeding and complete drainage jobs.

Draining requires a total of 9,862 lin ft of pipe, 21 manholes and seven inlets. Bidders had the option of reinforced concrete or vitrified clay for perforated subdrain pipe. The contract is based on the alternate for reinforced concrete. Storm drains under aprons L & M will use reinforced concrete pipe, 12 in. to 30 in. in diameter, and vitrified clay pipe, 4 in. to 8 in. in diameter, for door pocket drains.

Specifications require concrete mixtures with a flexural strength of 575 lb per sq in. at an age of 14 days.

The contractor furnishes all materials. However, the Government will supply electricity, water and/or gas from completed distribution lines which may be used for final tests of the completed systems.

The three bidders are:

| | | |
|---|---|---|
| 1C | Peter Kiewit Son's Co., Sheridan, Wyo | $1,275,341 |
| 2 | Western Contracting Corp., Sioux City, Iowa | 1,327,214* |
| 3 | Northwestern Engineering Co., Rapid City, South Dakota | 1,357,961 |
| EE | Corps of Engineers, Omaha District | 1,099,400 |

### Aprons L & M

| Bids: 6-26-56 Items | Unit | Quantity | Unit Prices 1 C | 2 |
|---|---|---|---|---|
| Site prepare, exist facilities, remov & adjust | ls | job | $30,000 | $50,000 |
| Remov rigid pave | sy | 400 | 3.50 | 1.10 |
| flexible pave | sy | 460 | 1.20 | 0.25 |
| Excav | cy | 112,000 | 0.75 | *1.20 |
| Apron pavement | | | | |
| Pavement, conc | cy | 27,121 | 10.50 | 12.00 |
| Cmt for conc pave | bbl | 40,684 | 4.05 | 3.60 |
| Pave, rigid or shoulder, granular filter crse, 4" | sy | 78,300 | 0.65 | 0.45 |
| Pave, flex, subbase crse, 15 CBR, 9½" | sy | 10,520 | 1.30 | 0.85 |
| 5" | sy | 15,250 | 0.70 | 0.45 |
| 35 CBR, 10" | sy | 140 | 1.40 | 1.10 |
| 8" | sy | 270 | 1.10 | 0.90 |
| 80 CBR, 6", base crse | sy | 25,770 | 1.15 | 0.95 |
| 12" base crse | sy | 270 | 2.30 | 2.40 |
| Bit prime coat | gal | 8,600 | 0.18 | 0.25 |
| Surf crse for taxiway replace & shoulders | t | 3,040 | 10.00 | 9.50 |
| Bit matl for surf crse | gal | 40,700 | 0.17 | 0.25 |
| Tie-down anchors | ea | 197 | 12.00 | 6.50 |
| Roadway Pavement | | | | |
| Pavement, conc | cy | 1,910 | 16.50 | 12.80 |
| Cmt for conc pave | bbl | 2,870 | 4.05 | 3.60 |
| Pave, rigid or shoulder, granular filter crse, 4" | sy | 8,220 | 0.65 | 0.45 |
| Pave, flex, base crse, 80 CBR, 9" | sy | 660 | 1.75 | 1.40 |
| Bit prime coat | gal | 220 | 0.25 | 0.25 |
| Surf crse | t | 56 | 12.00 | 9.50 |
| Bit matl for surf crse | gal | 750 | 0.20 | 0.25 |
| Subdrains | | | | |
| Pipe, perforated | lf | 4,700 | 2.50 | 3.00 |
| Flush & observ risers | ea | 16 | 50.00 | 45.00 |
| Manholes | ea | 13 | 400.00 | 400.00 |
| Storm drains | | | | |
| Pipe, 12" | lf | 725 | 5.50 | 6.20 |
| 15" | lf | 40 | 6.00 | 7.80 |
| 18" | lf | 720 | 7.50 | 8.50 |
| 27" | lf | 390 | 11.00 | 15.00 |
| 30" | lf | 390 | 14.00 | 16.50 |
| Manholes, type I | ea | 3 | 500.00 | 450.00 |
| Inlets, type I | ea | 3 | 400.00 | 320.00 |
| type II | ea | 2 | 300.00 | 350.00 |
| type III | ea | 2 | 700.00 | 900.00 |
| Door pocket drains | | | | |
| Pipe, 4" | lf | 1,140 | 2.00 | 3.20 |
| 6" | lf | 248 | 2.50 | 4.70 |
| 8" | lf | 614 | 2.90 | 4.70 |
| Manholes, type II | ea | 3 | 400.00 | 450.00 |
| Aircraft fuel pipe lines | lf | 1,030 | 14.00 | 9.60 |
| Electrical work | ls | job | 110,000 | 134,000 |
| Excav, rock, for drain & utility lines | cy | 10 | 10.00 | 13.50 |
| Marking & striping | ls | job | 1,500 | 600.00 |
| Topsoiling & seeding | | | | |
| Topsoiling | ac | 17 | 300.00 | 300.00 |
| Seed, permanent | ac | 17 | 200.00 | 200.00 |
| temporary | ls | job | 1,000 | 2,500 |
| Protection, temporary | ls | job | 1,500 | 1,600 |
| Watering | Mgal | 135 | 2.00 | 2.50 |
| Subtotals | | | 1C $948,231 | 2 $1,030,750 |

### South Apron

| Items | Unit | Quantity | 1 C | 2 |
|---|---|---|---|---|
| Site prepare, exist facilities, remov & adjust | ls | job | 50,000 | 52,000 |
| Remov flexible pave | sy | 3,000 | 1.10 | 0.25 |
| rigid pave | sy | 950 | 1.00 | 1.10 |
| Excav | cy | 9,100 | 0.75 | 1.20 |
| Apron pavement | | | | |
| Pavement, conc | cy | 11,012 | 11.00 | 12.00 |
| Cmt for conc pave | bbl | 16,520 | 4.05 | 3.60 |
| Pave, rigid or shoulder, granular filter crse, 4" | sy | 26,900 | 0.65 | 0.45 |
| Pave, flex, subbase crse, 15 CBR, 11" | sy | 5,510 | 1.50 | 0.95 |
| 35 CBR, 5" | sy | 1,460 | 0.70 | 0.45 |
| 8" | sy | 2,300 | 1.10 | 0.90 |
| 80 CBR, 6", base crse | sy | 6,970 | 1.15 | 0.95 |
| 12", base crse | sy | 2,300 | 2.30 | 2.40 |
| Bit prime coat | gal | 2,300 | 0.18 | 0.25 |
| Surf crse for pave replace & shoulders | t | 810 | 10.00 | 9.50 |
| Bit matl for surf crse | gal | 10,600 | 0.17 | 0.25 |
| Subdrains | | | | |
| Pipe, perforated | lf | 895 | 2.50 | 3.00 |
| Flush & observ risers | ea | 2 | 50.00 | 45.00 |
| Manholes | ea | 2 | 400.00 | 400.00 |
| Aircraft fuel pipe lines | lf | 450 | 11.00 | 4.50 |
| Electrical work | ls | job | 15,000 | 24,000 |
| Excav, rock, for drain & utility lines | cy | 10 | 10.00 | 13.50 |
| Marking and striping | ls | job | 1,000 | 100.00 |
| Topsoiling & seeding | | | | |
| Topsoiling | ac | 1 | 300.00 | 300.00 |
| Seed, permanent | ac | 1 | 200.00 | 200.00 |
| temporary | ls | job | 150.00 | 150.00 |
| Protection, temporary | ls | job | 220.00 | 100.00 |
| Watering | Mgal | 8 | 2.00 | 2.50 |
| Subtotals | | | 1C $327,110 | 2 $330,064 |

** Includes a $33,600 deduction from the subtotals, to be taken from the amount of excavation on Aprons L & M. The unit price per cy of excavation is to be adjusted accordingly, based on quantity and revised estimated amount.

Work started: 7-7-56, to be completed: 12-27-56

Liquidated damages: $100 per day

EASY, PROVEN WAY
to PERMANENTLY BOND
CONCRETE TO CONCRETE
WELD-CRETE®

Weld-Crete is the amazing liquid bonding agent which enables you to *permanently* bond new concrete *directly* to old concrete . . . or to most any other structurally sound surface . . . *without need for costly, time-consuming chipping, drilling, roughening, acid washing or scarifying of concrete base.*

Weld-Crete has equal bonding permanence all climates, all surfaces, all sorts of conditions. When used with quick setting cement topping you can lay new floors, ramps, driveways, etc. one day and run heavy truck traffic over them the next. Get facts from your building materials supply dealer or write Larsen Products Corp., Box 5756-I, Bethesda, Md.

TYPICAL WELD-CRETE APPLICATION

**National Brick Co., Terra Cotta, D. C.**

Here Weld-Crete was used to bond new ¾" concrete topping directly to old, badly chipped and spalled floor slab which had been subjected to ceaseless heavy truck traffic. Plant shut-down time eliminated as Weld-Crete enabled National's own mechanics to do job over week end.

FOUNDATIONS
UNDERPINNING
PILING

Spencer White & Prentis

SHORING
COFFERDAMS
SPECIAL SERVICES

CATALOGUE ON REQUEST

10 E. 40th ST., NEW YORK 16.
DETROIT: 2033 PARK AVE.
CHICAGO: 228 NORTH LaSALLE ST.
WASHINGTON, D. C.: TOWER BLDG.
IN CANADA: 700 BAY ST., TORONTO
1093 ST. CATHERINE ST. WEST, MONTREAL

# Materials and Labor Prices

Monthly Market Quotations by ENR Field Reporters

**See following ENR issues for OTHER PRICES:**
- Sept. 27—Clay Products, Lime, Plaster, Paint, Roofing, Wage Rates, Building Board, Lath, Insulation
- Oct. 4—Cement, Aggregates, Ready-mixed Concrete, Asphalt • Oct. 11—Iron & Steel Products, Pipe

## LUMBER, TIMBER, PLYWOOD—PER M FT., B.M., CARLOAD LOTS F.O.B.

**SOUTHERN PINE AND DOUGLAS FIR**

All Southern Pine is No. 2 common or better and for No. 1 N. C. Box. (Prices in Bold Face)

*All Fir boards, dimensions, planks No. 2, Fir small timbers and timbers are No. 1. Lengths up to 20 ft. (Prices in italics)*

**LONG LEAF Y. P.** Merchantable grade up to 20 ft.

**PLYWOOD** Rail freight increment (See note for base price)

| | | 1x6 s4s | 1x8 s4s | 2x4 s4s | 2x6 s4s | 2x8 s4s | 2x10 s4s | 3x12 Rgh | 6x12 Rgh | 12x12 Rgh | Long Leaf Y. P. 2x12 Rgh | Long Leaf Y. P. 12x12 Rgh | Plywood 5/8" | Plywood 3/4" |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Atlanta** | † | **$83 00** | **$88 00** | **$77 50** | **$76 00** | **$79 50** | **$83 00** | **$81 00** | ...... | ...... | ...... | ...... | $22 32 | $27 24 |
| **Baltimore** | * | **92 00** | **96 00** | **96 00** | **98 00** | **98 00** | **102 00** | **114 00** | ...... | ...... | **$170 00** | **$185 00** | 25 92 | 31 60 |
| | | *105 00g* | *105 00g* | *123 00g* | *123 00g* | *123 00g* | *123 00g* | *133 00g* | *$144.00* | *$144.00* | ...... | ...... | ...... | ...... |
| **Birmingham** | † | **86 00** | **88 00** | **81 00** | **88 00** | **91 00** | **96 00** | **111 00** | ...... | ...... | **115 00** | **160 00** | 21 78 | 26 58 |
| | | *107.00* | *107 00* | *110 00* | *110 00* | *110 00* | *111 50* | *110 00* | *107 00* | *107 00* | ...... | ...... | ...... | ...... |
| **Boston** | 3 | **101 00f** | **101 00f** | **105 00f** | **105 00f** | **105 00f** | **105 00f** | ...... | ...... | ...... | ...... | ...... | 25 92 | 31 60 |
| | | *96 00n* | *96 00n* | *114 00* | *114 00* | *114 00* | *121 00* | *127 00* | *138/143* | *143/153* | ...... | ...... | ...... | ...... |
| **Chicago** | ** | **96 00** | **99 00** | **93 00** | **107 00** | **115 00** | **116 00** | **111 00** | ...... | ...... | **139 00** | **139 00** | 22 45 | 27 37 |
| | | *108 00* | *106 00* | *119 00* | *117 00* | *117 00* | *118 00* | *126 00* | *126 00* | *126 00* | ...... | ...... | ...... | ...... |
| **Cincinnati** | * | **101 25** | **102 50** | **90 00** | **98 25** | **103 00** | **111 50** | **119 50** | ...... | ...... | **141 75** | **141 75** | 25 00 | 30 48 |
| | | *102 00* | *103 00* | *111 50* | *113 25* | *114 75* | *115 00* | *138 00* | *138 00* | *138 00* | ...... | ...... | ...... | ...... |
| **Cleveland** | ** | **91 00** | **92 00** | **103 00** | **100 00** | **100 00** | **101 00** | ...... | ...... | ...... | ...... | ...... | 25 37 | 30 93 |
| | | ...... | ...... | *117 00* | *113 00* | *113 00* | *113 00* | *131 00* | *131 00* | *131 00* | ...... | ...... | ...... | ...... |
| **Dallas** | k‡ | **75 00** | **82 00** | **75 00** | **75 00** | **72 00** | **72 00** | **130 00** | ...... | ...... | **130 00** | **140 00** | 18 72 | 22 80 |
| **Denver** | * | *Not in stock* | | *120 00* | *121 00* | *121 00* | *123 00* | *138 00* | *155 00* | *164 00* | ...... | ...... | 13 92 | 16 98 |
| **Detroit** | ‡ | **115 00** | **118 00** | **114 00** | **115 00** | **118 00** | **122 00** | ...... | ...... | ...... | **130 00** | ...... | 25 00 | 30 48 |
| | | *125 00* | *125 00* | *130 00* | *130 00* | *130 00* | *135 00* | *185 00* | *195 00* | *195 00* | ...... | ...... | ...... | ...... |
| **Kansas City** | * | **125 00** | **125 00** | **120 00** | **125 00** | **135 00** | **135 00** | ...... | ...... | ...... | ...... | ...... | 16 56 | 20 16 |
| | | *125 00* | *125 00* | *125 00* | *125 00* | *130 00* | *135 00* | *165 00* | *185 00* | *210 00* | ...... | ...... | ...... | ...... |
| **Los Angeles** | 1 | *98 00* | *98 00* | *98 00* | *98 00* | *98 00* | *98 00* | *121 00* | *131 00* | *121 00* | ...... | ...... | 16 61ab | 20 25ab |
| **Minneapolis** | # | *140 00* | *140 00* | *145 00* | *145 00* | *145 00* | *145 00* | *185 00* | *185 00* | *185 00* | ...... | ...... | 19 89 | 24 25 |
| **Montreal** | ab | **96 00** | **106 00** | **96 00** | **96 00** | **115 00** | **134 00** | | ...... | ...... | **123 00** | **123 00** | ...... | ...... |
| | | *180 00* | *180 00* | *180 00* | *180 00* | *180 00* | *180 00* | *170 00* | *170 00* | *170 00* | ...... | ...... | ...... | ...... |
| **New Orleans** | † | **92 00** | **92 00** | **97 00** | **97 00** | **96 00** | **100 00** | **124 50** | ...... | ...... | **156 00** | **154 00** | 18 72 | 22 80 |
| | † | *113 50* | *113 50* | *110 00* | *123 50* | *123 50* | *123 50* | *136 00* | *136 00* | *156 00* | ...... | ...... | ...... | ...... |
| **New York** | 3 | **115 00** | **117 00** | **122 00** | **127 00** | **127 00** | **127 00** | **170.00** | ...... | ...... | **255/275** | **255/275** | 25 92 | 31 60 |
| | | ...... | ...... | *122.50* | *124 00* | *125 00* | *125 00* | *175/180* | *175/180* | *175/180* | ...... | ...... | ...... | ...... |
| **Philadelphia** | ‡ | | **Range from: $117.00 to $137.00** | | | | **117/137** | **117/137** | ...... | | **214/224** | **214/224** | 25 92 | 31 60 |
| | | | *Range from $131.00 to $163.00* | | | | *131/163* | *136/158* | *165 00* | *165 00* | ...... | ...... | ...... | ...... |
| **Pittsburgh** | 2 | **130 00** | **140 00** | **130 00** | **155 00** | **140 00** | **145 00** | ... | ...... | ...... | **155 00** | ...... | 25 92 | 31 60 |
| | | *130 00* | *140 00* | *130 00* | *155 00* | *140 00* | *145 00* | ...... | *200 00* | *200 00* | ...... | ...... | ...... | ...... |
| **St. Louis** | # | **115 00** | **117 00** | **125 00d** | **127 00d** | **127 00e** | **133 00e** | | | | ...... | ...... | 18 72 | 22 80 |
| | | ...... | | *133 00* | *135 00e* | *135 00e* | *141 00e* | *191 00e* | *191 00* | *191 00* | ...... | ...... | ...... | ...... |
| **San Francisco** | A | *86 00* | *86 00* | *88 00* | *88 00* | *88 00* | *88 00* | *125 00* | *132 00* | *140 00* | ...... | ...... | 12 22 | 14 91a |
| **Seattle** | † | *65 00* | *75 00* | *76 00* | *78 00* | *78 00* | *80 00* | *95 00* | *95 00* | *95 00* | ...... | ...... | ...... | ...... |
| **Toronto** | a | **100 00** | **103 00** | **98 00** | **98 00** | **100 00** | **100 00** | **117 00** | ...... | ...... | **100 00** | ...... | ...... | ...... |
| | | *114 00* | *117 00* | *128 00* | *130 00* | *130 00* | *140 00* | *150 00* | *145 00* | *150 00* | ...... | ...... | ...... | ...... |

† F.o.b. mill. * F.o.b. city, CL, out of yard. ** F.o.b. city, CL, direct mill shipment. ‡ Deliv. to contr. CL. 1. Retail, LCL, at yard. # Retail, LCL, deliv. 2. Deliv. truck lots. 3. asd., truckload lots, 5/6 Mftbm

**LUMBER:** Bold Face Type, Southern Pine. Italics, Douglas Fir. *a Spruce. *b Tax exempt. *c 5M lots. *d 8, 10 & 12 ft. lengths. *e 8 to 16 ft. lengths. *f Hemlock *g No. 1 common. *j 8ft. lengths. *k No. 3 common. *n #3. A incl rail rate from North west mills to San Francisco are $11.50 to $15.00 per M ft. bm. From Northern Calif mills $9.00 by rail, $9.50 by truck. All rates for surfaced stock. For rough, add $3.00 to above figures.

**PLYWOOD:** Interior Fir Plywood, 4′ by 8′ panels, 5-ply, sanded 2 sides, water resistant glue, carload lots, delivered per 1,000 sq. ft. surface. Seattle base price on 5/8", $147.00; on 3/4", $165.00. Exterior 5/8", $163.00, 3/4", $183.00. For other centers add rail freight increment from table on proper size. Oiling and edge sealing charges included. *a Lower rate by water shipment. *b 50,000 lb. minimum.

## GLASS, EXPLOSIVES, CHEMICALS

| | WINDOW GLASS: Discounts from jobbers list, Feb. 1, 1950a Single or Double Strength — A quality | WINDOW GLASS — B quality | EXPLOSIVES: Per lb. 40% Ammonia Gelatin in 50 lb. cases delivered in 200 lb. lots* |
|---|---|---|---|
| Atlanta | 77%c | 78%e | $0 2465 |
| Baltimore | 74%d | 76%d | .2465 |
| Birmingham | 82% | 83% | .1915 |
| Boston | 72-10% | 72-10% | .2465 |
| Chicago | 72% | 72% | .2465 |
| Cincinnati | 74% | 74% | .2465 |
| Cleveland | 74-2-10% | 74-2-10% | .2865 |
| Dallas | 75% | 75% | .2540 |
| Denver | 73% | 73% | .2515 |
| Detroit | 74-10-10% | 74-10-10% | .2465 |
| Kansas City | 76-10% | 76-10% | .2515 |
| Los Angeles | 70% | 76% | .2490 |
| Minneapolis | 71-10% | 71-10% | .2515 |
| Montreal | 40-10-5%bc | 40-10-5%b | 22.05h |
| New Orleans | 76% | 78% | .2515 |
| New York | 79% | 79% | .4125g |
| Philadelphia | 74% | 76% | .2465 |
| Pittsburgh | 73% | 73% | .2465 |
| St. Louis | 76-10% | 76-10% | .2515 |
| San Francisco | 60% | 68% | .2465 |
| Seattle | 67% | 70% | .2490 |

Price of 60% Ammonia Gelatin is $0.15 per lb. higher than 40% in U. S. $1.75 per 100 lbs. higher in Canada.

**Glass:** *a Jobbers' list price per box, 14 x 20, ss, $42.75 for A quality, $37.50 for B quality; 14 x 20, ds, $60.00 for A quality, $52.75 for B quality. *b Discount from list, Apr. 1951; sales tax included, but 6% tax exemption not allowable for. *c 77% for single strength *d Discount 6/16/52. *e 77% for double strength

**Explosives:** * Cartridges of 1¼", 1½", 1¾", 2", 2¼", 2½", 3" diameters. Urban prices influenced by service charges or local storage and delivery regulations do not consistently reflect quantity prices in less congested areas. *g In borough of Kings, Queens, and Richmond and in Manhattan south of Canal St., add delivery charge of $20.00 per trip. *h F.o.b Beloeil (near Montreal), per 100 lb. forcite, 40% Forcite 60%, $23.80

40% Ammonia Gelatin price ranges in other than urban areas, per lb. (except Seismograph Grades)

| | C/L 20,000 lb. net | Tons | 200 lb. lots |
|---|---|---|---|
| E. of the Miss., except Fla. and Me | $0 1915 | $0 2265 | $0 2465 |
| W. of Miss. to Rocky Mtn. States, Fla. and Maine | .1965 | .2315 | .2515 |
| Rocky Mtn. States | .1965 | .2315 | .2515 |
| Pacific N. W. States | .1940 | .2290 | .2490 |
| Pacific S. W. States | .1915 | .2265 | .2465 |

## PILES, TIES F.O.B.

### PILES

Prices per linear foot, fir and pine, bark off, f.o.b. cars, New York. Fir based on Wash. and Ore. points to New York shipping area; pine based on freight from Norfolk.

| Dimensions | Points | Length | By Rail — Pine* | By Rail — Fir |
|---|---|---|---|---|
| 12-in. at butt | 6-in. | 30 to 50-ft. | $0.51 | .... |
| 12-in.—2-ft. from butt | 6-in. | 50 to 59-ft. | .54 | .... |
| 12-in.—2-ft. from butt | 6-in. | 60 to 69-ft. | .58 | .... |
| 12-in.—2-ft. from butt | 6-in. | 90 to 100-ft. | .... | .... |
| 13-in.—3-ft. from butt | 5-in. | 91-to 100-ft. | .... | .... |
| 14-in.—2-ft. from butt | 6-in. | 50 to 69-ft. | .50/68 | .... |
| 14-in.—2-ft. from butt | 6-in. | 70 to 79-ft. | .78/.88 | .93 |
| 14-in.—2-ft. from butt | 5-in. | 80 to 85-ft. | .83/93 | .94 |
| 14-in.—2-ft. from butt | 5-in. | 85 to 89-ft. | .... | 1.00 |
| 14-in.—2-ft. from butt | 5-in. | 90 to 100-ft. | .... | 1.02 |

* Pine piling over 80-ft. available only in limited quantities

### RAILWAY TIES

Prices f.o.b. per tie for carload lots:

| | | 6" x 8" x 8′ Untr. | 6" x 8" x 8′ Tr. | 7" x 8" x 8′6" Untr. | 7" x 8" x 8′6" Tr. |
|---|---|---|---|---|---|
| **Birmingham*** | Hardwood, Grade 3 | $1 70 | $2 55 | Gr. 5 $2 25 | $3 33 |
| | Grade 2 | 1 50 | 2 35 | " 4 2 10 | 3 18 |
| | Grade 1 | 1 15 | 2 00 | " 3a 1 70 | 2 78 |
| **Chicago** | Red Oak | ..... | 4 00a | ..... | 4 60a |
| **New York** | S. L. Sap Pine | 2 00d | 4 00d | 3 00g | 6 00g |
| | Mixed Oak | 2 50d | 4 50d | 3 50g | 6 50g |
| **Philadelphia** | Red Oak | 2 95/3 15 | 4.50/4 70 | 3 60/3 80 | 5 50/5 75 |
| **St. Louis** | White Oak | 2 75 | ..... | 3 00 | ..... |
| | Red Oak | 2 65 | 3 20a | 2 80 | 3 50a |
| | Sap Pine or Cypress | ..... | 3 10a | ..... | 3 45a |
| **San Francisco** | Douglas Fir | 2 13ef | 3 09ef | 2 88bef | 4 63caf |

Tr.—Treated; Untr.—Untreated. *a* Creosoted. *b* 7" x 9" x 8′. *c* Empty cel *d* 6 x 8 x 8′6" *e* Green. *f* f.o.b. cars. *g* 7 x 9 x 8′6" * Add 75¢/tie freight charge to Birmingham.

### CHEMICALS

Water, sewage treatment, road work, f.o.b. carlots, New York

| | |
|---|---|
| Bleaching powder in drums f.o.b. works, per 100 lb | $5 02 |
| Chlorine cylinders, liquid, per lb. f.o.b. works | .103 |
| Calcium chloride, 77-80%, flaked, 100-lb. paper bag, f.o.b. works, ton | 29 00 |
| Silicate of soda, 52 deg., in drums, f.o.b. works, per 100 lb | 2 30 |
| Soda ash, 58%, in paper bags, per 100 lb. dense | 1 70 |
| Sulphate of aluminum, commercial, in 100-lb. bags f.o.b. works | 1 85 |
| Sulphate of copper, in bags, 99% per 100 lb. f.o.b. works | 14 90 |

SEABOARD CONSTRUCTION CO. SPEEDS 20 JOBS WITH GENERAL ELECTRIC TWO-WAY RADIO!

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# Construction Reports

## Bids Asked—Low Bidders—Contracts Awarded—First Section—

*Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 36, N. Y., ELSIE EAVES, Manager*
*J. A. MAHONEY, M. WETZEL, L. M. FELIX, M. E. SCIORRA. F. S. DEMBEK, Reports.*
*J. H. WEBBER, M. R. ROESSLER, E. R. HUBER, Statistics.*

## NEW ENGLAND

### HEAVY CONSTRUCTION—BA

▲† **Me., Topsham**—AIE SHOP, etc.—BA 9/25—U. S. Eng., 150 Causeway St., Boston, Mass., AIE shop, fire station, auto maintenance shop, officers quarters, club, chapel and gymnasium, Air Force Station ENG-19-016-57-55, $1,250,000-$1,500,000. Plans deposit $25, refundable, Alonzo J. Harriman, Inc., 292 Court St., Auburn, archts. CD 8/29.

Mass., **Brookline**—BATHHOUSE, etc.—BA 10/5—Town, Bd. Selectmen, Town Hall, bathhouse, swimming pool, 70 Tappan St. $751,000. Plans deposit $25, refundable. Anderson-Beckwith & Haible, 11 Beacon St., Boston, archts. CD 2/9.

### BUILDINGS—BA

Conn., **Groton**—SCHOOL, etc.—BA 9/25—Sacred Heart Roman Catholic Parish, Rev. Leo E. Lavallee, pastor, 42 Eastern Point Rd., grammar school and convent, Mitchell Ave. and Poquonnock Rd., $350,000. Plans deposit $50. Albert J. Roy, 120 Front St., Worcester, Mass., assoc. archt. Kelton C. Paonchaud & Carlton B. Ryder, Hull Bldg., Madison, Conn., archts. CD 10/21.

▲ **R. I., Providence**—APARTMENTS—BA 9/26—Samuel P. Lazarus, 235 Freeman Parkway, Philip Gardens Apartments, three bldgs., 2 story, 41x325 ft., 46x258 ft. and 41x194 ft., Blackstone Blvd. $1,000,000. Henry W. Markoff, 271 George M. Cohan Blvd., archt. CD 9/4.

### BUILDINGS—SLC

Me., **Bangor**—Y.M.C.A. addn.—Bangor Young Men's Christian Assn., 127 Hammond St., soon lets contract Y.M.C.A. addn., remodeling, $400,000. Eaton W. Tarbell & Assoc., 84 Harlow St., archts. CD 8/29.

▲ Mass., **Wakefield**—OFFICE—American Mutual Liability Insurance Co., 142 Berkeley St., Boston, soon lets contract home office, Rte. 128 and Lake Quannapowit. $2,000,000. Chester Lindsay Churchill, 9 Newbury St., Boston, archt. CD 8/28.

### HEAVY CONSTRUCTION—LB & CA

† **Consolidated Constructors, Inc.**, 807 Congress St., Portland, Me. CA **$559,786**, est. $463,600. recreation field house bldg., Loring Air Force Base, ENG-19-016-57-8, LIMESTONE, ME. U. S. Eng., 150 Causeway St., Boston, Mass. CD 8/22, under LB.

▲† **B. Perini & Sons, Inc.**, 73 Montwait Ave., Farmingham, Mass., CA **$1,917,777**, est. $1,788,691, constr. Otter Brook Dam, Keene-Roxbury, CIVENG-19-016-57-4, NEW HAMPSHIRE. U. S. Eng., 150 Causeway St., Boston, Mass. Bids Aug. 24. CD 8/29, under LB.

**Bayer & Mingolla Constr. Co., Inc.**, 550 Park Ave., Worcester, Mass. LB **$56,000**, est. $60,000. granite faced rein.-conc. retaining wall, Regatta Point, Lake Quinsigamond, Worcester, MASSACHUSETTS. Commonwealth of Mass., Dpt. Natural Resources, 15 Ashburton Pl., Boston, Mass. Edwards, Kelcey & Beck, 470 Atlantic Ave., Boston, Mass., engrs. Bids Sept. 4. CD 8/22.

▲† **Great Lakes Dredge & Dock Co.**, 17 Battery Place, New York, N. Y. LB **$4,621,860**, est. $4,279,500. imprv. dredging President Rds., Boston Harbor, CIVENG-19-016-57-5, MASSACHUSETTS. U. S. Eng., 150 Causeway St., Boston, Mass. Bids Sept. 7. CD 8/29.

**Roy M. Wright**, 876 Bay St., Springfield, Mass. LB **$83,102**, est. $85,000. road imprvs., WESTFIELD, MASS. City, Bd. P. Wks., City Hall, Westfield, Mass. Tighe & Bond, Inc., Bowers and Pequot Sts., Holyoke, Mass., engrs.

**CONNECTICUT**—State Hy. Comn., State Office Bldg., Hartford,

D. **Arrigoni**, 605 Main St., Middletown, Conn., LB **$742,457**. (9 bidders) hot asph. on b. conc. paving 12,895 lin. ft. Hartford Research Facility access road, incl. 2 corrugated structural plate pipe arches, etc., Middletown. Bids Sept. 5. CD 8/29.

**CONNECTICUT**—State Hy. Dpt., 165 Capitol Ave., Hartford,

Lane **Constr. Corp.**, 965 E. Main St., Meriden, Conn., CA, **$788,627**. bit. macad. 7,337 lin. ft. Hammonasset Connector, Proj. 75-58, Madison. Bids July 16, awarded Aug. 31. CD 7/19, under LB.

### BUILDINGS—LB & CA

F. W. **Cunningham & Sons**, 181 State St., Portland, Me. LB **$549,818**. HOSPITAL, BELFAST, ME. Waldo County General Hospital, Hospital Bldg. Comn., 11 Main St., Belfast, Me. Bids Sept. 6. CD 8/22.

**Green-Freedman Baking Co., Inc.**, 390 Harrison Ave., Boston, Mass. will not construct BAKERY, 411-413 Harrison Ave., BASTON, MASS. Approx. **$100,000**. Project abandoned. CD 5/16.

**Stammell Constr. Co., Inc.**, 33 Hurley St., Cambridge, Mass. LB **$440,000**, est. $400,000 2-unit ARMORY and BATTALION HEADQUARTERS, Eleanor St., CHELSEA, MASS. State, Armory Comn., 905 Commonwealth Ave., Boston, Mass. Bids Sept. 10. CD 9/20.

(Continued on page 94)

▲ **Daniel O'Connell's Sons, Inc.**, 480 Hampden St., Holyoke, Mass. CA **$5,494,243**. Proj. 50-547, HOSPITAL, BOILER HOUSE, LAUNDRY, Brightside Institute Property, HOLYOKE, MASS. Providence Hospital, Most Rev. Christopher J. Weldon, pres., Sisters of Providence, 60 Elliot St., Springfield, Mass. CD 9/4, under LB.

E. H. **Porter Constr. Co.**, 13 Wallis St., Peabody, Mass. CA **$799,069**. HIGH SCHOOL addn., LYNNFIELD, MASS. Town, Charles W. Kessler, chn. School Comn., Lynnfield, Mass. CD 8/29, under LB.

▲ **J. S. Nasin Co.**, North Windham Rd., Willimantic, Conn., CA **$1,700,000**. regional HIGH SCHOOL, Wall St., HEBRON, CONN. Towns of Hebron, Andover and Marlborough, Regional Bd. Educ., Hebron Elementary School, Hebron, Conn. Bids Aug. 7. CD 8/21, under LB.

▲ **John Zandonella**, 70 Chase St., Bridgeport, Conn., LB **$3,744,000**. SENIOR HIGH SCHOOL, North Ave., WESTPORT, CONN. Town School Bldg., Comn., Jessup Rd., Westport, Conn. Bids Aug. 29.

## MIDDLE ATLANTIC

### HEAVY CONSTRUCTION—BA

† **N. Y., Niagara Falls**—HANGAR IMPRVS.—BA 9/26—U. S. Property & Fiscal Officer for New York, New York State Arsenal, 201 64 St., Brooklyn, Zone 20, installing addnl. heating and electric and appurtenant work, NYANG Hangar, Niagara Falls Municipal Airport, Inv. No. NG 30-192-57-9.

▲† **Pennsylvania and New Jersey**—BA 10/11—U. S. Eng., 2635 Abbottsford Rd., Phila., dredging Delaware, River, Bucks, Co., Pa., and Burlington Co., N. J., ENG-36-109-57-16. $2,500,000. CD 2/4/44, under Pa., Phila

### BUILDINGS—BA

**N. Y., Stony Brook**—SCHOOL—BA 10/1—Bd. Directors Stony Brook Assembly, Inc., Stony Brook, general constr., heating and ventilating, plumbing and sanitary, electrical work for addn., alterations to Memorial Hall Bldg., Stony Brook School. Plans deposit $25 general constr., $15 trades, Frederic P. Wiedersum Assoc., 85 W. Hawthorne Ave., Valley Stream, archts.

#### *PROJECTS COVERED*

#### *By Size*

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterways $44,000; other public works $73,000; industrial buildings $93,000; other buildings $344,000. Also Foreign projects of $100,000 and more in size of interest to American contractors.

#### *By Regions & Classes of Construction*

(In order of Listing)

BIDS ASKED
LOW BIDDERS
CONTRACTS AWARDED

| | |
|---|---|
| New England | Middle West |
| Middle Atlantic | West of Mississippi |
| South | Far West |

PROPOSED WORK

| | |
|---|---|
| Water Supply | Public Buildings |
| Sewers, Waste Disposal | Mass Housing |
| Bridges | Commercial Buildings |
| Streets & Roads | Industrial Buildings |
| Earthwork, Waterways | Unclassified |

#### *In These Stages*

PROPOSED WORK: Before and including appointment of engineers or architects.

BIDS ASKED: BA (new announcements only). For full calendar, see also preceding issues.

SOON LETS CONTRACT: SLC

LOW BIDDERS: LB On jobs below $500,000 in value all low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.

CONTRACTS AWARDED: CA Except awards to low bidders previously reported in low bidder stage.

CD dates shown are of Construction Daily Issue in which last previous report was published.

OWNERS, ENGINEERS, ARCHITECTS, CONTRACTORS are invited to report their new jobs for listing in these reports when they meet or exceed the size minimums shown above. Address these news releases to J. A. Mahoney, REPORTS, ENGINEERING NEWS-RECORD, 330 W. 42 St., New York 36, N. Y.

#### *Symbols and Abbreviations Include:*

| | |
|---|---|
| † | Federal Government |
| ▲ | Project of $1,000,000 or over |
| ENR | Engineering News-Record |
| CD | Construction Daily |

For additional reports see Construction Daily.

▲† **D. C., Wash.**—PHYSICAL EDUCATION—BA 10/4—General Services Admin., P. Bldgs. Service, 19th and F Sts. N. W., Wash. 25, approx. 43,000 sq. ft. physical education and activities bldg., Gallaudet College, Proj. No. 49201, Cont. No. GS-R3-B-4845. Est. $1,400,000. Plans deposit $30. CD 3/28/55.

▲ **N. Y., New York**—SCHOOL—BA 10/16—Bd. Educ., Bureau Constr., 42-15 Crescent St., Long Island City, Zone 1, general constr., plumbing and drainage, heating and ventilating, electrical work and lighting fixtures for P. S. 138, Pugsley and Omstead Aves., Bronx Boro, $2,095,450. Plans deposit $25, general constr., $7 for trades. CD 8/30.

▲ **N. Y., New York**—SCHOOL—BA 10/23—Bd. Educ., Bureau Constr., 42-15 Crescent St., Long Island City, Zone 1, Bronx High School of Science, West 205 St. and Goulden Ave., The Bronx, $6,104,000. Plans deposit 35 general constr., $20 each for plumbing and drainage, heating and ventilating, electrical work and lighting fixtures, $5 electric passenger elevator. CD 1/20/55.

**N. J., Mt. Laurel**—FACTORY—Bids Asked—Harry M. Berry, 1525 Wood St., Phila., Pa., 1 story, masonry factory bldg. $93,000. William Duble, State Hy. No. 38 and Chapel Ave., Merchantville, archt.

### HEAVY CONSTRUCTION—LB & CA

▲ **Karl Koch Erecting Co.**, 362 Casanova Ave., New York, N.Y. LB **$5,323,030**, est. $5,451,000. (4 bidders) superstructure vertical lift railroad bridge over Arthur Kill between Elizabeth, N. J. and Staten Island, N. Y., NEW YORK and NEW JERSEY. Baltimore & Ohio R.R. Co., Charles and Baltimore Sts., Baltimore, Md. Bids Aug. 31. CD 4/30.

▲ **N. R. Corbisello**, 36 Tompkins St., Binghamton, N. Y. LB **$1,398,965**. relocation of N. Y. State Hy. Rte. 37B between Town Line Rd. and Louisville Corner, Spec. PA-5-11022, St. Lawrence Contr. No. 30, NEW YORK. Power Authority of the State of New York, 270 Broadway, New York, N. Y. Bids Sept. 11. CD 8/17.

▲ **S. J. Groves & Sons Co.**, 19 Rector St., New York, N. Y. CA **$2,231,451**. relocation of N. Y. State Hy. Rte. 37 between Waddington and Coles Creek, St. Lawrence Co., Spec. No. PA-5-11021, St. Lawrence Contr. No. 29, NEW YORK. Power Authority of the State of New York, 270 Broadway, New York, N. Y. CD 9/7, under LB.

† **U.S. Eng.**, 111 E. 16 St., New York 3, N. Y. cancelled bids to have been opened about Oct. 4, unmanned gap filler facilities, Blue Mountain Lake, ENG-30-075-57-29, BLUE MOUNTAIN, N. Y. CD 8/21.

† **U. S. Eng.**, 111 E. 16 St., New York 3, N. Y., cancelled bids to have been opened about Oct. 4, unmanned gap filler facilities, ENG-30-075-57-30, OSWEGATCHIE, N. Y. CD 8/21.

▲ **PENNSYLVANIA**—State Hy. Dpt. 506 N. Office Bldg., Harrisburg,

Pa.—**Anthony J. Marsolino, T/A Marsolino Constr. Co.**, 309 Fayette National Bank Bldg., Uniontown, Pa. LB **$2,739,102**. (7 bidders) constr. 38,908 ft. divided road crushed aggregate base with bit. surf. 28 ft. wide each side of concrete divisor, two I-beam bridges, 2 prestressed precast rein.-con. bridge, Somerset Twp., T.A. 31, Washington Co.;

Pa.—**A. B. Cole**, Meshoppen, Pa. LB **$709,607**. (2 bidders) constr. 26,306 ft. rein.-con. 2 prestressed precast rein.-con. bridges Sylvania and Troy Boros, Columbia and Troy Twps., T.R.U.S. 6, Bradford Co.;

Pa.—**Collins & Maxwell, Inc.**, Easton, Pa. LB **$532,817**. (5 bidders) constr. 11,601 ft. crushed aggregate base with bit. surf. 2 prestressed precast rein.-con. bridge decks, Allentown City, South Whitehall Twp., L.R. 557 (2), Lehigh Co.;

Pa.—**A. C. Hack & Sons, Inc.**, Box 447, Bloomsburg, Pa. LB **$969,314**. (3 bidders) constr. 2,466 ft. crushed aggregate base with bit. surf. 28 ft. wide, Bloomsburg, T.R. 42, Columbia Co.;

Pa.—**Western Pa. Asphalt Paving Co.**, 245 Race St., Meadville, Pa. LB **$78,349**. (3 bidders) surf. 20,252 ft. existing pavement with bit. surf. Pleasant, Brokenstraw and Conewango Twps., T.R.U.S. 6, Warren Co. Bids Aug. 31. CD 8/3.

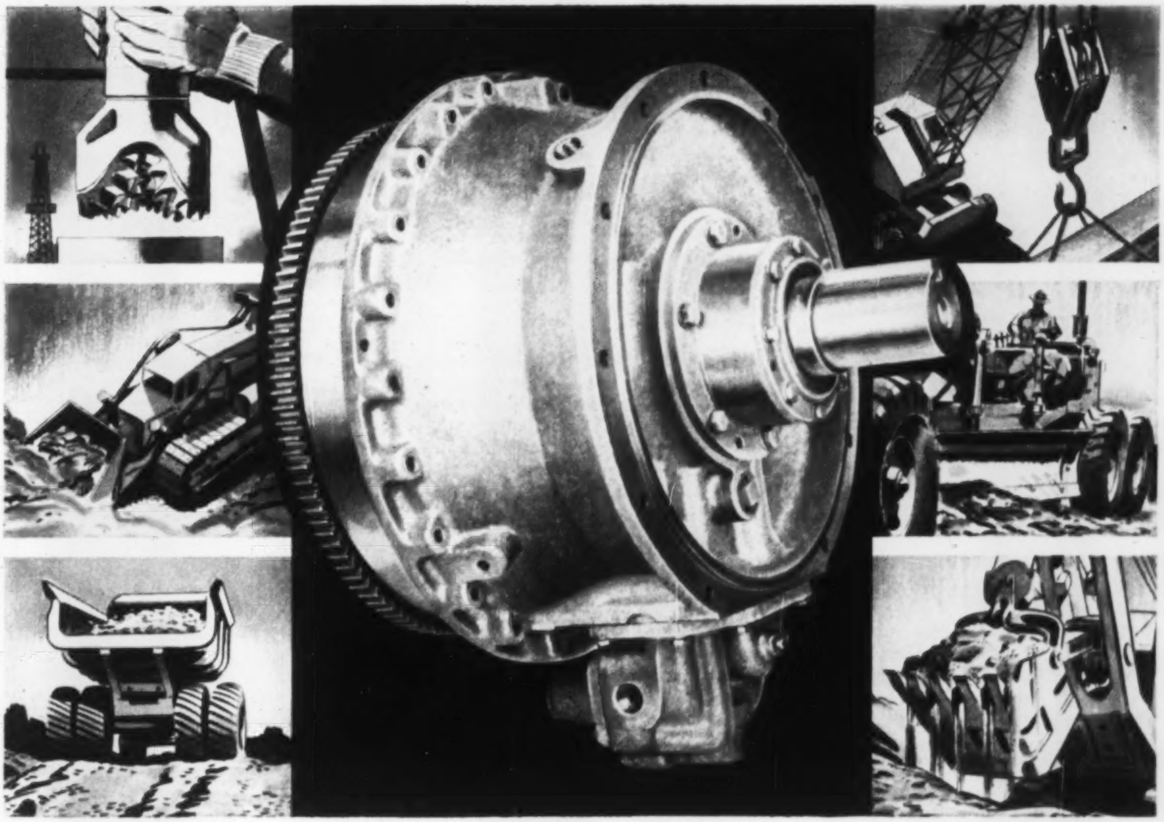
▲ **MARYLAND**—State Rds. Comn., 108 E. Lexington St., Baltimore, Zone 2,

Md.—**S. T. Brotemarkle**, Cumberland, Md. CA **$706,778**. wid'n., relocation, surf. 4.295 mi. U.S. 220, A-461-7-620, Allegany Co.;

Md.—**Rich. F. Kline**, 14 Water St., Frederick, Md. CA **$1,094,331**. surf. 6.277 mi. Thurmont By-Pass relocated U.S. 15, F 522-3-720, Frederick Co. CD 7/25, under LB.

### BUILDINGS—LB & CA

▲ **Turner Constr. Co.**, 150 E. 42 St., New York, N. Y. and **G. D. Campbell Building Co.**, 39 Cannon St., Poughkeepsie, N. Y. CA Est. **$2,000,000**. ENGINEERING LABORATORY, KINGSTON, N. Y. International



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# Darex Diary

*by Henry L. Kennedy*
*Member, American Concrete Institute*
*Manager, Construction Products*
*Dewey & Almy Chemical Company*

*"Hurricane-Tested" DARACONE
*New Uses for DARAWELD

WE HAVE always been proud of the excellent water repellency displayed by brick masonry after it has been properly treated with DARACONE. There are literally hundreds of installations that have attested to its premium performance. But I never expected to see the terrific forces of nature turned loose on a DARACONE-treated building such as was experienced in East Providence, Rhode Island, in the past two years.

Cabot, Cabot & Forbes built an office, warehouse and manufacturing plant for Dupont. As there was severe water penetration of the walls even during light rain storms, all the brick masonry was treated with DARACONE. Then along came Carol, the first of two severe hurricanes to strike the New England coast that year. Wind velocity reached 90 miles an hour — accompanied by torrential rains. Although the interior walls were inspected several times during the storm, they were dry. The DARACONE did what it was intended to do: it repelled the wind-driven water.

It wasn't too long before the building was again subjected to harsh treatment. Hurricane Edna — with 70 miles per hour winds — struck Rhode Island and deposited almost 6" of rainfall in three hours. Then during the summer of 1955, two more hurricanes—Connie and Diane — repeated the story, with the same high wind and terrific rainfall. In each case DARACONE's performance was the same: there was no masonry leakage.

To me, this is convincing evidence of the excellent job of water repellency that a premium silicone-base material like DARACONE can do for brick masonry.

I HAD an interesting talk the other day with one of our German consultants from Frankfurt, Germany. He told me about some of their interesting uses for DARAWELD. As an integral admixture for gypsum and lime plasters, it increases adhesion and improves the finishing properties. Because of the excellent water-resistance of DARAWELD, this use is particularly desirable in confined areas where warm, moist air or steam prevails. The amount they use is roughly 8 to 10 per cent of DARAWELD by weight of the plaster. When this amount is added, the internal cohesion of the plaster is much greater; also there is an improvement in the adhesion of the plaster to the brown or scratch coat. Water resistance of the plaster is improved, and bond of new plaster to old is substantially increased.

Here is another new application for DARAWELD. This same consultant told me that they quite often suffer excessive dusting due to the inadequate curing of concrete floors. Of course, we also have this situation in this country. They have used very successfully as a corrective, a one-coat application of DARAWELD which has been diluted one-part of DARAWELD to one-part of water. This means two gallons for one — a really economical coverage. We have tried several sections of our floors here at Cambridge, and it appears to be a good dust-preventive measure, resulting in a clean, dust-free floor at all times. After painting the DARAWELD on the floor, the surface takes on a slight sheen that is a decided improvement over the old surface. It was ready for foot-traffic in less than 48 hours.

DA

**DEWEY AND ALMY**
**CHEMICAL COMPANY**
DIVISION OF W. R. GRACE & CO

Cambridge 40, Massachusetts; San Leandro, California; Montreal 32, Canada

(Continued from page 92)

Business Machine Corp., 590 Madison Ave., New York 22, N. Y. CD 7/5.

▲ **Joseph Pierlli & Sam Saltz,** 484 Route 17, Paramus N. J. Owner Builds. **$2,565,000.** 94 HOMES, Oradell Hill Section, to be known as "Overlook Park". EMERSON, N. J. Carl F. Saalbach, 30 Sanford Ave., Emerson, N. J., archt.

▲ **Belmont Development Corp.,** 644 Broad St., Newark, N. J., Owner Builds. **$1,025,000** 250 HOMES, Manville Section, HILLSBOROUGH (P.O. MANVILLE) N. J.

**Paternoster Constr. Co.,** 41 Ryan Ave., Trenton, N. J CA, **$509,797.** general contract 1 story, 67,500 sq. ft., brick, glass vocational wing at Trenton Central HIGH SCHOOL, TRENTON, N. J. Bd. Educ., 9 S. Stockton St., Trenton, N. J. Bids Aug. 30. CD 9/6, under LB.

**L. C. Adams & Son,** 26 S. South Carolina Ave., Atlantic City, N. J. CA, **$650,000.** 1 story, 150x400 ft., 60,000 sq. ft. WAREHOUSE, OFFICE and site imprvs., 4 covered loading platforms, WEST ATLANTIC CITY, N. J. Spencer Gift, Inc., 117 N. Ohio Ave., Atlantic City, N. J. Bids Aug. 20. CD 9/7, under LB.

**Earl Christner,** 229 Pittsburgh St., Scottdale, Pa. LB Est **$404,064.** 1 story, 23,100 sq. ft. brick elementary SCHOOL, HERMINIE, PA. School Auth. of Sewickly Twp., Herminie Pa. Robert J. Brocker, 401 S. Maple St., Greensburg, Pa., archt.

▲ **Stofflett & Tillottson and James McGraw Co.,** 2043 Eastburn Ave., Phila., Pa. CA **$5,500,000.** 6 and 10 story, concrete, steel, masonry Northern Division MEDICAL SURGICAL AND CLINIC BLDG., PHILA., PA Albert Einstein Memorial Center, Widener Bldg., Phila., Pa. Abraham Levy, 1411 Walnut St., Phila., Pa., archt. Dorfman-Bloom, 1411 Walnut St., Phila., Pa., engr. CD 1/21/54.

**Ranallo Constr. Co.,** 250 26 St., Pittsburgh, Pa. CA Est. **$100,000.** WAREHOUSE addn., PITTSBURGH, PA. Nicklaus Transfer & Storage Co., 50 26 St., Pittsburgh, Pa. Bids Aug. 15. CD 8/13.

**B. Zambrano Co.,** 141 S. Highland Ave., Pittsburgh, Pa LB **$434,862.** 2 story, 80x130 ft., 3 story, 30x160 ft., brick, block HIGH SCHOOL addn., Neville Island, PITTSBURGH, PA. School Dist. of Neville Twp., Pittsburgh, Pa. Ingham Boyd and Pratt, Empire Bldg., Pittsburgh, Pa., archts. CD 6/6/55.

**L & L Corp.,** 2349 34 St. N.W., Wash., D. C. Owner Builds. **$440,000.** 86 APARTMENT units, 4901-4915 Battery Lane, BETHESDA, MD. E. W. Dreyfuss, 1019 15 St. N.W., Wash., D. C., archt.

**J. B. Ferguson Co.,** 312 W. Washington St., Hagerstown, Md. CA **$998,000.** 1 story, steel, brick, concrete, Hancock SENIOR HIGH SCHOOL, Hancock, HAGERSTOWN, MD. Washington Co. Bd. Educ., Court House, Hagerstown, Md. CD 8/16, under LB.

**C. J. Dougherty & Sons,** 600 Tatnall St., Wilmington, Del. LB **$402,000.** (3 bidders) Stanton SCHOOL addn., STANTON, DEL. Stanton School Dist., Stanton, Del. Bids Sept. 5. CD 9/7.

## SOUTH

### HEAVY CONSTRUCTION—BA

**Fla., Tampa**—BA 9/27—Bd. Representatives, City Hall, Tampa, Div. XE27, sewers in Sulphur Springs-Nebraska Area; Div. XE 28, sewers in Sulphur Springs-Sitka Area, $562,600. Plans deposit $25; Div. XC13, Sulphur Springs trunk sewer; Dix SF-9, Alaska St. force main; Div. SD 7, Central Ave. and Wellswood River Crossings under Hillsborough River, $310,300. Plans deposit $25. Greeley & Hansen, 220 S. State St., Chicago 4, Ill. engrs.

**VIRGINIA**—BA 9/27—The Richmond-Petersburg Turnpike Auth., 1015 E. Main St., or P.O. Box 1-R, Richmond, Zone 2,

**Chesterfield Co.**—Contr. No. D-2-G, Sect. D, grading, drainage, paving and structures from point 5,100 ft. south of Swift Creek to point 1,800 ft. north of Route 10. Plans deposit $50. Parsons, Brinckerhoff, Hall & Macdonald, 51 Broadway, New York, N. Y., engrs., adv. ENR 9/20. CD 11/3/54.

† **Fla., Cape Canaveral Auxiliary Air Force Base**—SERVICES AND MATERIALS—BA 9/28—Contg. Officer, Missile Test Center, Patrick Air Force Base, services and materials for modification of Guided Missile Assembly Bldg. "G", IFB 08-606-57-66.

† **Fla., Key West**—PIER—BA 10/4—Pub. Wks. Office, Sixth Naval Dist., Charleston, S. C., repairs to Pier "B" and approaches, remove existing pier, constr. 25x307 ft. L-shaped pier on shore leg and 55x307 ft. on outboard leg piping, Naval Air Station, NBy 4930, Spec. 4930/56. Plans deposit $10.

**Fla., Miami**—BA 10/4—City, Water & Sewer Bd., 3342 Pan American Dr., Contr. 136, 6 m.g. reservoir, 800 Galloway Rd. Plans deposit $10.

### BUILDINGS—BA

† **Georgia and South Carolina**—WAREHOUSE, etc.—BA 10/2—U. S. Eng., 200 E. St. Julian St., Savannah, Ga., warehouse, garage and storage area, Savannah River Basin, Savannah River, Hartwell Proj., CIVENG-09-133-57-103. CD 8/28.

**La., New Orleans**—SCHOOL—BA 10/2—Orleans Parish School Bd., 703 Nicholas Bauer Bldg., 1 story, brick Edward Douglas White Elementary School, Trafalagar St. bounded by Beauvoir and Saltus Sts. $306,500. Plans deposit $40. Edward M. Y. Tsoi, 301 Claiborne Towers, archt.

**Ga., Adel**—SCHOOLS—BA 10/9—Georgia State School Bldg. Auth., 244 Washington St., Atlanta, Cook High School addn. (white); Cook County Training School colored); Adel Elementary School (white); Sparks Elementary School (white) Lenox Elementary School addn. (white) Adel Elementary Physical Education Bldg. addn. (white) Sparks Elementary Physical Education Bldg. addn. (white). Plans deposit $50. Edward V. Jones & Assoca. and William N. Cox, Royal Bldg., Albany, archts.

## BUILDINGS—SLC

La., **New Iberia**—FOOD PRODUCTS—Perry L. Brown, archt., 3064 Perkins Rd., Box 4797, Audubon Station, Baton Rouge, soon lets contract, 85,000 sq. ft. food products bldg., for Bruce Food Products Co., New Iberia, La. $800,000.

## HEAVY CONSTRUCTION—LB & CA

**Merritt-Chapman & Scott Corp.**, 260 Madison Ave., New York 16, N. Y., CA **$500,000**. earth-filled marginal wharf, at kraft pulp and paperboard mill, JACKSONVILLE, FLA. National Container Corp., 7 Central Park West, New York, N. Y. CD 4/26.

▲ **Feed Howland, Inc.**, 1451 N.W. 20 St., Miami, Fla., CA **$1,697,400**. nose hangar bldg., National Air Lines, Miami International Airport, MIAMI, FLA. Bd. Comrs. Dade Co., Courthouse, Miami, Fla. Bids Aug. 28, awarded Sept. 6. CD 9/5, under LB.

**Constructors of Florida, Inc.**, 167 Almeria Ave., Coral Gables, Fla., LB **$234,507** Contract 9, sanitary sewers and sewage pumping station, WEST PALM BEACH, FLA. City, City Hall, West Palm Beach, Fla. CD 1/14/54.

**Marbaugh Constr. Co.**, 211 N.W. 5 St., Fort Lauderdale, Fla., LB **$246,317**, Contract 6, sanitary sewers and sewage pumping stations, WEST PALM BEACH, FLA. City, City Hall, West Palm Beach, Fla. Bids Aug. 27. CD 8/6.

**Constructors of Florida, Inc.**, 167 Almeria Ave., Coral Gables, Fla., LB **$365,855** Contract 7, sanitary sewers and sewage pumping station, WEST PALM BEACH, FLA. City, City Hall, West Palm Beach, Fla. Bids Aug. 28. CD 8/6.

**Inter County Constr. Corp.**, Box 1640, 2224 N.E. 12 Ave., Fort Lauderdale, Fla., LB **$370,012**, Contract 8, sanitary sewers, sewage pumping stations (West Palm Beach, Fla.).

† **U. S. Eng.**, 830 W. Broadway, Louisville, Ky., rejected bids Aug. 31, misc. items, utility bldg., Lock and Dam No. 1, Green River, ENG-15-029-57-6, KENTUCKY. LB **$87,711**. CD 9/6, under LB.

**Watkins Constr. Co.**, Gadsden, Ala., CA **$599,131**, natural gas sys., FRANKLIN, TENN. City, City Hall, Franklin, Tenn. CD 7/18, under LB.

† **Bruce Contg. Co.**, 1811 12 Ave. S., Nashville, Tenn., CA **$198,770**. 2 squadron buildings, Sewart Air Force Base, ENG-40-058-56-38, SMYRNA, TENN. U. S. Eng., 306 Federal Office Bldg., Nashville, Tenn. Bids July 31, awarded Sept. 3. CD 7/5.

## BUILDINGS—LB & CA

**Daniel Lumber Co. Inc.**, LaGrange, Ga., CA **$678,450**. Kelley Elementary SCHOOL and West Side Junior High School, LAGRANGE, GA. State School Bldg. Auth., 244 Washington St. S.W., Atlanta, Ga. Bids Sept. 4, awarded Sept. 5. CD 8/8.

**L. F. Freeman,** 1075 Carlyle Ave., Macon, Ga., CA **$536,200**. Glenwood Elementary and High SCHOOL addn., Glenwood Elementary lighting and sanitary addn., Winder-Barrow Elementary and High School, WINDER, GA. State School Bldg. Auth., 244 Washington St. S.W., Atlanta, Ga. Bids June 19, awarded Aug. 7. CD 7/26, under LB.

**A. C. Samford,** Box 1229, Albany, Ga. LB **$557,434**. Proj. 444, HOSPITAL for colored patients, CHATTAHOOCHEE, FLA. Bd. Comrs. State Institutions, State Capitol Bldg., Tallahassee, Fla. Bids Aug. 28. CD 8/8.

**Pinellas Co. Bd. P. Instruction,** School Administration Bldg., Clearwater, Fla., cancelled bids to have been opened Sept. 9, JUNIOR COLLEGE addn., St. Petersburg, CLEARWATER, FLA. CD 8/22.

**H. J. High Constr. Co.**, 1015 W. Amelia Ave., Orlando, Fla. LB **$344,000.** Negro Elementary SCHOOL, Washington Shores, ORLANDO, FLA. Orange Co. Bd. Pub. Instruction, J. B. Walker, supt., Orlando, Fla. Bids Aug. 20. CD 8/10.

▲ **Rust Eng. Co.**, 2109 5 Ave. N., 400 Exchange Bldg., Birmingham, Ala., LB **$1,064,000**. St. Marks POWER PLANT UNIT No. 5, TALLAHASSEE, FLA. City, A. B. Hopkins, mgr., City Hall, Tallahassee, Fla. Bids Aug. 23. CD 7/23.

**U. S. Eng.**, 2301 Grant St., Mobile 7, Ala., cancelled bids to have been opened about Aug. 14, Phase II, 400-units of Capehart HOUSING, Redstone Arsenal, ENG=01-076-57-7, HUNTSVILLE, ALA. CD 7/18.

**Platoff Constr. Co.**, 501 E. Woodbine St., Louisville, Ky. CA Approx. **$95,000**. WAREHOUSE, OFFICE, Euclid, LOUISVILLE, KY. Tripper Realty Corp., c/o Arthur Tafel, Sr., archt., 140 S. Third St., Louisville 1, Ky. Bids Aug. 30.

▲ **J. A. Jones Constr. Co.**, 401 Church St., Nashville, Tenn., CA **$4,356,326**. excavation and foundation work on electric POWER STEAM PLANT, MEMPHIS, TENN. Memphis Light, Gas & Water Comn., 2996 Hy. 61 S., Memphis, Tenn. CD 8/15, under LB.

# MIDDLE WEST

## HEAVY CONSTRUCTION—BA

Mich., **Jackson**—BA 9/25—City, Lloyd Head, purch. agt., City Hall, 4,306 ft. 15 to 96 in. relief and storm sewers Constr. 2. Plans deposit $15, refundable. McNamee, Porter & Seeley, 306 State Savings Bank Bldg., Ann Arbor, engrs. CD 11/16/44.

▲ † **Illinois**—BA 10/17—U.S. Eng., 475 Merchandise Mart, Chicago, Zone 54, widening second three mi. Calumet-Sag Channel, Serial No. CIVENG-11-032-57-10. CD 6/30/55.

## BUILDINGS—BA

Wis., **Milwaukee**—OFFICE—BA 9/25—Employers Mutual of Wausau, Wausau, 2 story, 250,000 sq. ft. office bldg. $750,000. Childs & Smith, 20 N. Wacker Dr., Chicago, Ill., archts. CD 8/24.

O., **Canton**—SCHOOL—BA 10/17—Canton Bd. Educ., 618 High St. N.W., 2 story, brick addn. to Woodland School, $400,000. Firestone & Motter, 1412 Cleveland Ave. N.W., archts. CD 2/17.

▲ **Mich., Dearborn**—ADMINISTRATION—Bids Asked—Ford Motor Co., J. A. MacAlarney, dir., Plant Engr. Office, P. O. Box 117, administration bldg., incl. employees' facilities, Rawsonville.

## BUILDINGS—SLC

Ill., **Chicago**—FUNERAL CHAPEL—Lain & Son, Inc., 316 W. 63 St., soon lets contract, 2 story, brick, stone, steel, concrete funeral chapel, 1031-39 N. Dearborn St. $400,000. Naess & Murphy, 80 E. Jackson Blvd., archts. CD 8/2.

O., **Cincinnati**—SYNAGOGUE—Congregation Chav. Shalom, 425 Forest Ave., soon lets contract 1 story, brick, stone synagogue. $550,000. Leavitt & Assoc., Powhatan Ave., Norfolk, Va., archts. Watson & Hart, Llewellyn Ave., Norfolk, Va., engrs. CD 9/5, under LB.

## HEAVY CONSTRUCTION—LB & CA

† **Great Lakes Dredge & Dock Co.**, Williamson Bldg., Cleveland 14, O., LB **$636,600**, est. $524,320 (2 bidders) maintenance dredging Cuyahoga River, OHIO. U. S. Eng., Engineer Park, Buffalo 7, N. Y. Bids Sept. 6. CD 8/27.

▲† **Merritt-Chapman & Scott Corp.**, Standard Bldg., Cleveland, O. LB **$3,358,344**. removing 1,134,900 cu. yd. rock and earth from Ashtabula Harbor at Ashtabula, OHIO. U. S. Eng., Engineer Park, Buffalo 7, N. Y. CD 7/27.

**Galier Bros. Constr. Co.**, 4106 Mayfield Rd., Cleveland 21, O. LB **$111,634**, est. $115,000. (3 bidders) paving Montauk, W. 48 and Wales Ave., PARMA, O. City, Fred W. Newcomb, service dir., City Hall, 6611 Ridge Rd., Cleveland 29, O. Albert Chabeck, c/o Verne Clark Eng. Co., 4050 Brookpark Rd., Cleveland 29, O., engr.

**E. E. Schnitzius & Co., Inc.**, 3707 Sutherland Ave., Indianapolis, Ind., LB **$394,159**. C.A.A. Proj. 9-12-030-601, flex. type runways and taxiway in connection with the Muncie Airport imprv. project, MUNCIE, IND. Delaware Co. Bd. Aviation Comrs. Muncie Airport, Muncie, Ind. Bids Aug. 14. CD 8/9.

▲ **ILLINOIS**—State Div. Hys., Springfield,

Ill.—**Earl Walker Co.**, Sullivan, Ill., LB **$381,910** (2 bidders) b. conc. 4.87 mi., 4.19 mi. wid'n. SBI 150, Alexander Co.;

Ill.—**Thompson Asphalt Co.**, 6 and McCambridge Sts., Madison, Ill., LB **$127,855** (2 bidders) Dist. 8 patching and resurfacing, Greene and Macoupin Counties;

Ill.—**Triangle Constr. Co.**, 480 N. Evergreen St., Kankakee, Ill., LB **$628,209** (1 bidder) b. conc. resurf. 2.79 mi. FAI Rte. 04, Kankakee Co.;

Ill.—**Calhoun County Constr. Co.**, P.O. Box 201, Springfield, Ill., LB **$355,393** (7 bidders) grading, retaining walls, Peoria, FAI Rte. 05, Peoria Co.;

Ill.—**R. A. Cullinan & Sons,** Tremton, Ill., LB **$112,873** (1 bidder) wid'n. 0.73 mi., conc. base 0.25 mi. SBI 9, Morton, Tazewell Co. Bids Sept. 6. CD 8/31.

**ILLINOIS**—State Div. Hys, Springfield,

**McCann Co. Inc.**, 2145 Devereaux St., Springfield, Ill., CA, **$607,564** two 8-span steel girder bridges over I.C.R.R., Rte. 14 near Belleville, St. Clair Co. Bids Aug. 21, awarded Sept. 5. CD 8/27, under LB.

† **Massman Constr. Co.**, 3917 Broadway, Kansas City Mo., and **Frazier-Davis Constr. Co.**, 1319 Macklind Ave. St. Louis 10, Mo., LB **$285,250**, est. $396,400 (only bidder) erecting lower miter gate and sill repairs, Auxiliary Lock, Lock & Dam No. 26, Mississippi River at Alton, CIVENG 23-065-57-9, ILLINOIS. U. S. Eng., 420 Locust St., St. Louis 2, Mo. Bids Sept. 5. CD 8/14.

**Keeley Bros. Constg. Co.**, 4211 State St., East St. Louis, Ill., CA, **$934,239**. general contract Proj. A, swimming pool, imprvs., equip., auto parking imprvs. and sewer, water and gas sys. in Jones Park; Proj. B. swimming pool, imprvs., equip., sewer, water and gas sys. imprvs. Lincoln Park, EAST ST. LOUIS, ILL. Bd. Park Comrs. East St. Louis Park Dist., P. J. Cronin, pres., 929 Missouri Ave., East St. Louis, Ill. Bids Aug. 16, awarded Aug. 31. CD 8/21, under LB.

**Moths Paving Co.**, 4260 N. 128 St., Milwaukee, Wis., CA, **$90,400**. paving W. Hampton, W. Melvina, W. Fiebrantz and N. 54 Sts., MILWAUKEE, WIS. City, City Hall, Milwaukee, Wis. Bids Aug. 24, awarded Aug. 31.

† **S. J. Groves & Sons**, Wesley Temple Bldg., Minneapolis, Minn. LB **$773,823**. pavements, Kinross Air Force Base, KINROSS, MICH. U. S. Eng., 600 E. Jefferson Ave., Detroit, Mich. Bids Aug. 23. CD 9/29/55.

## BUILDINGS—LB & CA

**Kares Constr. Co.**, 17403 Harvard Ave., Cleveland 28, O. Own Forces. **$680,000**. 40 Scholz pre-fabricated

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Cambridge 40, Massachusetts

HOMES, W. 11 St., ASHTABULA, O. Donald J. Scholz, c/o Scholz Homes, 2001 N. Westwood St., Toledo, O., archt. Awarded Aug. 27.

**Christenson Constr. Co.**, Kent, O. CA Est. **$300,000**. PLANT to mfg. precast hollow rein.-con. slabs, southwest of city limits, KENT, O. Lake Erie Flexicore, Inc., Kent, O. Awarded Aug. 31.

**Bauer Bros. Constr. Co.**, 424 Lebanon Ave., Belleville, Ill., CA, Est. **$350,000**. 4 story, 62x210 ft., brick, stone, masonry blocks, concrete, steel HIGH SCHOOL north of Rte. 50 between Breese Cemetery Rd. and North Plum St., BREESE, ILL. Mater Dei High School, Inc., Rev. Henry H. Aydt, pres., c/o Chancery Office, Diocese of Belleville, 222 S. 3 St., Belleville, Ill. Bids Aug. 24. CD 8/9.

▲ **Blaw-Knox Co.**, Farmers Bank Bldg., Pittsburgh 30, Pa., CA, STRUCTURAL MILL, South Side Works, CHICAGO, ILL. United States Steel Corp., 71 Broadway, New York, N. Y. CD 3/19;
**Birdsboro Steel Fdry. & Machine Co.**, 1941 Furnace St., Birdsboro, Pa., CA, structural mill hot bed and transfer equipment, structural steel straightners and appurtenances and structural steel cold saw, shears, gages and appurtenances for the South Side Works (Chicago, Ill.).

**Chicago Desk Pad Co.**, 15 N. Jefferson St., Chicago, Ill. Own Forces. $200,000. 1 story, brick, steel, FACTORY and OFFICES, 4640 N. Oketo St., HARWOOD HEIGHTS, ILL. Kiefstad Eng. Co., 4444 W. Montrose Ave., Chicago, Ill., engr.

**Ragnar Benson, Inc.**, 4744 W. Rice St., Chicago 51, Ill., CA Est. **$600,000**. SERVICE PARTS BLDG., 2nd addition, PAINT BLDG., 2nd addition, TEST BLDG. addn., LaGRANGE, ILL. Electromotive Div., General Motors Corp., General Motors Bldg., Detroit, Mich. Bids July 24. CD 7/23.

**Eugene Kennedy**, Taylorville, Ill., CA **$800,000**. MANUFACTURING and WAREHOUSE BLDG., Rte. 48, near TAYLORVILLE, ILL. Sangamon Company, Taylorville, Ill. Ralph Stoetzel, 105 W. Monroe St., Chicago, Ill., archt.

**Joseph J. Duffy Co.**, 4994 N. Elston St., Chicago, Ill., CA, **$697,221**. general contract EMPLOYEES BLDG. and LAUNDRY-GENERAL STORES BLDG. Tinley Park State Hospital, TINLEY PARK, ILL. State Div. Architecture & Eng., Armory-Office Bldg., Springfield, Ill. Bids July 3.

**Timber Constr. Co.**, 5416 W. Diversey Ave., Chicago, Ill. CA **$100,000**. 1 story, brick FACTORY and OFFICES, Wheeling Rd. north of Hintz Rd., WHEELING, ILL. Cerc Mfg. Co., 5580 N. Northwest Hy., Chicago, Ill. CD 11/1.

▲ **George H. Glover, Inc.**, 25601 Coolidge Hy., Oak Park, Mich. Owner Builds. **$2,000,000**. 180 brick HOMES, Thornwood subdivision, BIRMINGHAM, MICH.

▲ **Waltham Realty Corp.**, 24925 Mound Rd., Center Line, Mich. Owner Builds. **$1,600,000**. 100 brick ranch HOMES, Mae and Dale Sts., CENTER LINE, MICH.

**Home Counsellors, Inc.**, D. E. Monro, 30150 Ann Arbor Trail, Nankin, Mich. Owner Builds. **$800,000**. 50 brick HOMES, Ann Arbor Trail, NANKIN, MICH.

**Collins & Catlin, Inc.**, 2445 Pine Grove Ave., Port Huron, Mich. CA **$844,614**. Y.M.C.A. BLDG., PORT HURON, MICH. Young Men's Christian Assn., S. Davison, pres., 937 Sixth St., Port Huron, Mich. CD 8/16, under LB.

## WEST OF MISSISSIPPI

### HEAVY CONSTRUCTION—BA

**Minn., Ivanhoe**—BA 9/25—Lincoln Co., J. M. Domek, co. aud., imprv. 0.04 mi. S.A.R. 2 in Tyler between Lincoln St. and Jct. T.H. 14.

**Neb., Omaha**—TRANSFORMERS—BA 9/26—Omaha Public Power Dist., 17 and Harney Sts., Contr. 361, network transformers, Contr. 362, network protectors, Contr. 363, paper-ins. lead covered cable. A. G. Johnson, c/o owner, ch. engr. CD 8/17/51, under Public Buildings.

† **Iowa**—BA About 9/28—U. S. Eng., 1217 U. S. Post Office & Custom House, St. Paul 1, Minn. channel excav. near mouth of Upper Iowa River, New Albin, CIVENG-21-081-57-25.

**Tex., Ft. Worth**—BA 9-28—City, City Hall, railway underpass and connections connecting Rosedale St. with N-E Freeway, $128,000. Plans deposit $25. C. M. Thelin, Direc. Pub. Wks. Engr. CD 1/21/55.

**Mo., St. Louis**—FIELD HOUSE—BA 10/9—City, Frank J. McDevitt, pres. Bd. P. Service, 304 City Hall, 12 Blvd. and Market St., Zone 3, 1 story, 43-90 ft. field house, Jefferson and Wells Drs., Forest Park, $125,000, W. R. Crecelius, 301 City Hall, ch. engr. CD 5/31/55.

† **Montana**—BA 10/11—Bureau Reclamation, Dpt. Interior Bldg. 53, Denver Federal Center, Denver, Colo., Schedule Item 1, controlling station supervisory control and telemetering cubicle and assoc. equip. for Fort Peck dispatching office, Item 2, controlled station supervisory control and telemetering cubicle and assoc. equip. for Dawson Co. sub-station, Inv. DS 4757. CD 9/8/44.

### BUILDINGS—BA

**Kan., Topeka**—SCHOOL—BA 9/25—Bd. Educ., 415 W. 8 St., Margaret Hill McCarter Elementary School. $400,000. O. D. Howells & Assoc., Garlinghouse Bldg., archts. CD 6/11.

**Minn., St. Paul**—RESIDENCES—BA 9/27—Macalester College, C. J. Turck, pres., 1600 Grand Ave., men's residence, women's residence, addn. to existing dining hall, $700,000. Plans deposit $30. Ellerbe & Co., E. 505 First National Bank Bldg., archts.

**Tex., Hallettsville**—SCHOOLS—BA 9/27—Hallettsville Independent School Dist., Hallettsville, high school addn., $350,000; new elementary school, new Negro elementary unit, $400,000. Plans deposit $40 each. Herbert E. Kellner, 406 Austin Hy., San Antonio, archts. CD 3/19.

### HEAVY CONSTRUCTION—LB & CA

**Stafford Constr. Co.**, Beatrice, Neb., CA, **$84,095**. (4 bidders) sewage plant, MOUNT AYR, IOWA. Town, Town Hall, Mount Ayr, Iowa. Bids Aug. 22. CD 8/6.

▲ **MISSOURI**—State Hy. Dpt., Jefferson City,
Mo.—**J. A. Tobin Constr. Co.**, 3700 Rainbow Blvd., Kansas City, Kan. LB **$955,434**. 24 ft. c. conc. 9.256 mi. Macon Co.; LB **$763,631**. 22 ft. c. conc. 9.394 mi. Howell Co.;
Mo.—**Midwest Precote Co.**, 7600 E. 17 St., Kansas City, Mo. LB **$142,351**. wid'n., b. conc. 4.921 mi., Cole Co.;
Mo.—**Harrison Eng. & Constr. Corp.**, 3706 Broadway, Kansas City, Mo. LB **$249,186**. 24 ft. c. conc. 2.008 mi. Stoddard Co.; LB **$610,276**. c. conc. 6.083 mi. Stoddard Co. Bids Aug. 30. CD 8/17.

▲† **M. J. McGough Co.**, 1954 University Ave., St. Paul, Minn. CA Est. **$4,000,000**. SAGE operational and power buildings at Grand Forks Air Force Base, NORTH DAKOTA. Western Electric, Inc., Defense Projects Div., 220 Church St., New York, N. Y. (prime contractor) for The Air Force, Wright Field, Dayton, O. Burns & Roe, Inc., 160 W. Broadway, New York, N. Y. consult. engr. CD 2/24/55, under CA, under Unclassified, Alaska-Canada.

**Sorkness Constr. Co.**, N. 23 St. and 7 Ave., Fargo, N. D., CA, **$96,965**. 205.5 mi. rural telephone lines, Adams Co., N. D. and Harding and Parkins Counties, S. D., NORTH DAKOTA and SOUTH DAKOTA. Bowman Slope Rural Telephone Co., Bowman, N. D. Bids Aug. 23. CD 8/15.

▲† **C. F. Lytle Co.**, 250 Insurance Exchange Bldg., Sioux City, Iowa, CA, **$1,259,962**. approach zone grading, Ellsworth Air Force Base, Inv. 25-066-57-6, RAPID CITY, S. D. U. S. Eng., 1709 Jackson St., Omaha, Neb. Bids Aug. 23. CD 8/30, under LB.

† **U. S. Eng.**, 1709 Jackson St., Omaha, Neb., cancelled bids to have been opened Sept. 20. steam distr. revisions, Cornhusker Ordnance Plant, Inv. 25-066-57-15, GRAND ISLAND, NEB. CD 8/29.

▲ **Spaw-Glass, Inc.**, 2411 Times Blvd., Houston, Tex. LB **$1,196,838**, est. $1,150,000. 600 ft. open steel, concrete type wharf, HOUSTON, TEX. Port Comn., Wharf No. 3, Houston, Tex. Bids Aug. 30. CD 8/3.

**COLORADO**—State Hy. Dpt., 4201 E. Arkansas St., Denver,
**Carl V. Hill**, Greeley, Colo., CA **$437,632**, est. $448,000. road mix asph., surf. 11.503 mi. A-AA-S 15 (4) Unit 1, Mesa Co. Bids Sept. 6. CD 8/28.

† **COLORADO**—Bureau P. Rds., Dpt. Commerce, Bldg. 40, Denver Federal Center, Denver,
**Schmidt Constr. Co.**, 8150 W. 49 St., Arvada, Colo., CA **$557,705**, est. $525,000. grading 5.7 mi. Marvine-Phippsburg, Proj. 16D, Rio Blanco Co. Bids Aug. 30, awarded Sept. 4. CD 9/6, under LB.

† **J. S. Brown-E. F. Olds Plumbing & Heating Co.**, Colorado Springs, Colo., LB **$804,718** service and supply area (utilities) IFB 05-613-2? Air Force Academy, COLORADO SPRINGS, COLO. Dpt. Air Force, P. O. Box 1670, Colorado Springs, Colo. Bids Aug. 28. CD 7/30.

**Northwestern Eng. Co.**, P.O. Box 567, Denver, Colo. CA, **$789,829**. Part A, b. conc. streets in imprvt. Dist. 56-1, PUEBLO, COLO. City, City Hall, Pueblo, Colo. Bids Aug. 31. CD 8/2.

### BUILDINGS—LB & CA

▲ **Kraus-Anderson of St. Paul Co.**, 190 Ramsey St., St. Paul, Minn. CA, **$1,700,000**. SHOPPING CENTER, Hudson Rd. in area bounded by East Ave., Ruth and Conway Sts., ST. PAUL, MINN. J. T. Commerford, 1638 Ford Parkway, St. Paul, Minn., and L. Murray, 5720 Wayzata Blvd., Minneapolis, Minn. CD 1/12/55, under CA.

▲ **Abell-Howe Co.**, 53 W. Jackson Blvd. Chicago, Ill., CA, **$6,000,000**. FEED PLANT, CEDAR RAPIDS, IOWA. Hubbard Milling Co., 308 N. Front St., Mankato, Minn. T. E. Iberson Co., Flour Exchange Bldg., Minneapolis, Minn., archt.

**A. H. Brodkey Co.**, 2311 Douglas St., Omaha, Neb. CA, **$500,000**. SUPERMARKET and auxiliary facilities, 28 and Broadway, COUNCIL BLUFFS, IOWA. Hinky Dinky Stores, 701 S 11 St., Omaha, Neb.

**Geo. Moeller Constr. Co.**, 3007 Wyoming St., St. Louis 18, Mo. CA, **$384,674**. est. $350,000. 3 story, brick, steel JUNIOR HIGH SCHOOL, BERKELEY (ST. LOUIS 21 P. O.), MO. Berkeley Pub. Schools, Bd. Educ., T. L. Holman, supt. Schools, 5933 Caroline Ave., Berkeley 21, Mo. Bids Aug. 29. CD 8/24.

**Elmer E. Mark Constr. Co.**, 4150 Laclede Ave., St. Louis 8, Mo. CA, Est. **$93,000**. TRUCK TERMINAL on 49,000 sq. ft. Tract incl. 1 story, brick office, dockage space for 22 trucks, 1111 Carr Lane, ST. LOUIS, MO. Churchill Truck Lines, Chillicothe, Mo.

**Bushboom & Rauh Constr. Co.**, 109 E. Iron Ave., Salina, Kan. CA **$539,225**. general constr. GYMNASIUM-AUDITORIUM, State Teachers College, WAYNE, NEB. State Normal Bd., Lincoln, Neb., Bids Aug. 25. CD 7/27.

**James F. Beveridge**, Russell, Kan. CA, **$672,800**. general constr. 3 and 4 story, ground floor, 200x253 ft., U-shaped chronic-diagnostic treatment HOSPITAL addn., HAYS, KAN. Hadley Memorial Hospital, Austin Evans, administrator, 7 and Oak Sts., Hays, Kan. Bids Aug. 1, awarded Aug. 28. CD 8/21, under LB.

▲ **Knutson Constr. Co.**, 3803 S. Main St., Houston, Tex., CA, **$1,645,092**. SCIENCE BLDG., HOUSTON, TEX. Texas Southern University, 3201 Wheeler St., Houston, Tex. Bids Aug. 7. CD 8/29, under LB.

**Cookie Corp. of the Southwest**, Longview, Tex., Purchase and Hire, **$175,000**. cookie production PLANT, LONGVIEW, TEX. CD 8/6.

**Gregg Co.**, Longview, Tex. Owner Builds, **$110,000** asphalt PLANT, LONGVIEW, TEX. CD 8/15.

▲ **J. J. Fritch, General Contractor, Inc.**, 6834 Harry Hines Blvd., Dallas, Tex. LB **$1,533,900**. 2 story brick WOMEN'S DORMITORY and DINING HALL, LUBBOCK, TEX. Texas Technological College, Lubbock, Tex. Bids Sept. 5. CD 8/21.

**Brown-Schrepferman & Co.**, 240 Washington St., Denver, Colo. LB **$805,800**, est. $630,000. 3 story, full bsmnt., 37,200 sq. ft. Blue Cross-Blue Shield OFFICE, DENVER, COLO. Colorado Hospital Service & Colorado Medical Service, 1653 Lawrende St., Denver, Colo. Bids Aug. 30. CD 8/21.

**Craftsman Constr. Co.**, 1337 E. 18 Ave., Denver, Colo. CA, **$756,000**. three 2 story DORMITORIES, STUDENT UNION BLDG., Fort Lewis A & M College, DURANGO, COLO. Fort Lewis A & M College, Hesperus, Colo. Awarded Aug. 29. CD 8/8, under LB.

## FAR WEST

### BUILDINGS—BA

▲ **Utah, Provo**—HOSPITAL—BA 10/2—Latter Day Saints Church, 47 E. South Temple St., Salt Lake City, Valley Hospital addn. $1,000,000. Plans deposit $50. Willard C. Nelson, Box 704, 64 North First East, Provo, archt. CD 5/5/55.

### BUILDINGS—SLC

**Calif., Santa Ana**—BAKERY TRANSPORTATION FACILITIES—Barbara Ann Baking Co., 3545 Pasadena Ave., Los Angeles, bakery transportation, soon lets contract, tilt-up concrete transport bldg. for 90 trucks, facilities. $150,000. Bennett & Bennett, 1165 E. Colorado St., Pasadena, archts. CD 8/21.

### HEAVY CONSTRUCTION—LB & CA

▲ **Butler Constr. & Eng. Co.**, 3419 13 Ave. S.W., Seattle, Wash., LB **$1,759,705**. est. $1,750,000 (5 bidders) Aurora Ave. Underpass, Broad and Mercer Sts., SEATTLE, WASH. City, Bd. P. Wks., City-County Bldg., Seattle, Wash. Bids Sept. 5. CD 8/15.

▲ † **Vinson Constr. Co.**, P.O. Box 930, Phoenix, Ariz., LB **$2,143,907**, est. $2,061,549 (6 bidders) 12.7 mi. section of Ptah South Canal and 1/3 mi. McCoy Creek Wasteway Solano Proj. near Vacaville, CALIFORNIA, Bureau Reclamation Dpt. Interior, Winters, Calif. Bids Sept. 5. CD 7/20.

† **Wismer & Becker Electric Co.**, 1731 S. St. Sacramento, Calif., LB **$75,126**, est. $86,043, 69 kilovolt capacitor installation, Folxom-Elverta Terminal switching facilities, Central Valley Proj., Spec. DC 4707 CALIFORNIA. Bureau Reclamation, Dpt. Interior, Fulton and Marconi Aves., Sacramento, Calif. Bids Sept. 5. CD 7/20.

**CALIFORNIA**—State Div. Hys., 1120 N St., Sacramento,
**W. J. Kubon Co.**, 39A Mary St., San Rafael, Calif., LB **$495,513**. (4 bidders) toll plaza and administration bldg. about 0.25 mi. north of bridge across Carquinez Strait at Crockett on U.S. 40, Solano Co. Bids Sept. 5. CD 8/3.

▲ **California**—State Div. Hys., 1120 N. St., Sacramento,
**A. Teichert & Son, Inc.**, 1931 Stockton Blvd., Sacramento, Calif., LB **$1,847,302** (4 bidders) grading, paving 6.8 mi. 4-lane divided hy., underpass alterations, new underpass and bridge U.S. 50 and Sign Rte. 120 between Mossdale and Richards Ave., San Joaquin Co. Bids Sept. 5. CD 8/7.

**Weston Wiggs Eng. & Constr.**, 6795 Paramount Blvd., Long Beach 5, Calif., LM **$201,528**, est. $100,000 (4 bidders) water system facilities, Trousdale Estates, BEVERLY HILLS, CALIF. City, City Hall, Beverly Hills, Calif. Bids Aug. 28.

**O'Shannsey Constr. Co.**, 12934 Imperial Hy., Norwalk, Calif., LB **$99,737**, est. $109,910 (12 bidders) installing sanitary sewers Rainier Ave., South Whittier, LOS ANGELES, CALIF. Los Angeles Co., Hall of Records, Los Angeles, Calif. Bids Aug. 24. CD 8/6.

▲ **City**, City Hall, Los Angeles, Calif., rejected bids Aug. 29, Sections A and B, Unit II, North Central Outfall Sewer, Hyperion Treatment Plant, LOS ANGELES, CALIF., LB **$4,495,500**, est. $1,500,000. New bids Sept. 12. CD 8/10.

**Ben Fallgren**, 121 S. Alvarado St., Los Angeles, Calif., CA, **$123,455** (10 bidders) roof and appurtenant work at Reservoir No. 5, Canyon Blvd. and Ridgeside Dr., MONROVIA, CALIF. Monrovia City Council, City Hall, 415 S. Ivy Ave., Monrovia, Calif. CD 9/23/55.

▲ **T. M. Paige & H. P. Kingsley** 975 S. "E" St., San Bernardino, Calif., LB **$910,166** (3 bidders), Sch. A and D, North San Bernardino Flood Control Proj., SAN BERNARDINO, CALIF. San Bernardino County Flood Control Dist., 316 Mountain View Ave., San Bernardino, Calif. Bids Aug. 28;
**E. A. Irish**, 2944 Gleneden St., Los Angeles, Calif.) LB **$1,175,001**, (3 bidders) Sch. B (San Bernardino, Calif.).

(Continued on page 99)

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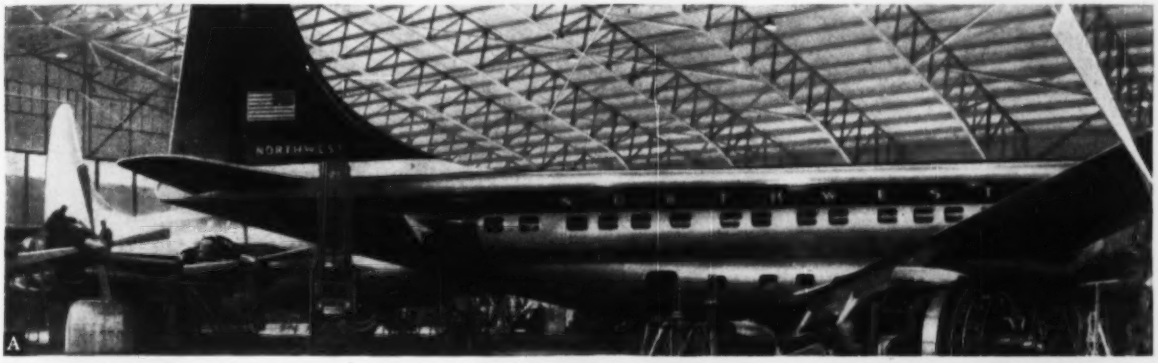

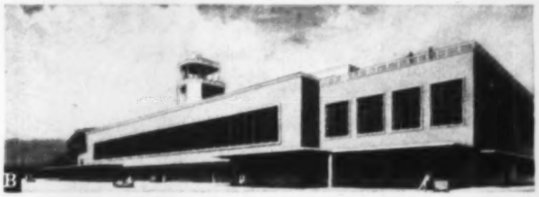

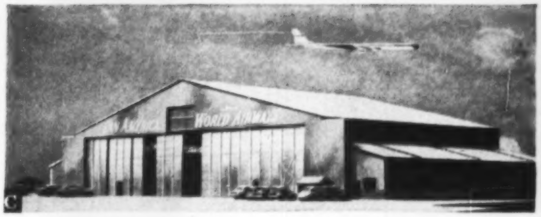

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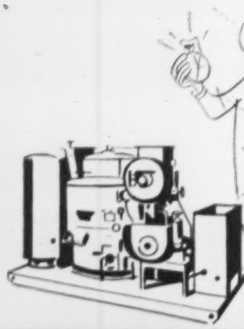

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(Continued from page 96)

### BUILDINGS—LB & CA

**Elmer Pedersen,** 924 Fine Ave., Fresno, Calif., CA, **$513,980** (3 bidders) Exeter Union HIGH SCHOOL addn., EXETER, CALIF. Exeter Union High School Dist., Exeter, Calif. Walter Wagner & Partners, 1831 Van Ness Blvd., Fresno, Calif., archts.-engrs. CD 2/17/55.

**Gilbert J. Martin Co.,** 2514 W. Vernon St., Los Angeles, Calif., Owner Builds, **$495,000.** 45 DWELLINGS, 6 St. East, Rodin and Andale Aves., LANCASTER CALIF.

**Tamarack Development Co.,** 130 Balboa Ave., Van Nuys, Calif., Owner Builds, **$768,000.** 88 DWELLINGS, 3 St. East, E. Ave. H-8, Loxton St., LANCASTER, CALIF.

▲ **Bethlehem Pacific Coast Steel Corp.,** 6000 S. Boyle St., Vernon, Calif., CA, **$1,384,736** structural steel portion main bldg. of Scattergood STEAM PLANT, El Segundo, LOS ANGELES, CALIF. Los Angeles Dpt. Water & Power, 207 S. Broadway, Los Angeles, Calif. CD 4/30/54.

**Crown Constr. Co.,** 5059 W. Pico Blvd., Los Angeles 19, Calif., CA, **$572,133.** reinforced brick Palmdale SCHOOL No. 4, PALMDALE, CALIF. Palmdale School Dist., Box 218, Palmdale, Calif. Bids July 27. CD 8/14, under LB.

▲ **Vinnell Co., Inc.,** 1145 Westminister Ave., Alhambra, Calif., CA, **$3,486,690.** PERMANENT PRODUCTION FLIGHT FACILITY, Air Force Plant No. 42, Contract No. 6, PALMDALE, CALIF. General Dynamics Corp., Convair Div., 3156 Pacific Hy., San Diego, Calif. Bids Aug. 2, awarded Aug. 7. CD 8/8, under LB.

## CANADA

### HEAVY CONSTRUCTION—LB & CA

**BRITISH COLUMBIA**—B. C. Govt., Parliament Bldgs., Victoria,

**Western Bridge & Steel Fabricators, Ltd.,** 145 W. 1 Ave., Vancouver, B. C., LB **$868,670** (2 bidders) fabricating, erecting steel superstructure for East Pine Bridge, Mile 210.8, Prince George north, Dawson Creek line of PGE Railway, Bids Aug. 29. CD 7/19.

**BRITISH COLUMBIA**—B. C. Govt., Parliament Bldgs., Victoria,

**Superior Concrete Products Ltd.,** Lynmour, P. O., B. C., LB **$205,534** (4 bidders) precast concrete bridge stringer units in Dewdney and Delta Electoral Districts.

**BRITISH COLUMBIA**—B. C. Govt., Parliament Bldgs., Victoria,

rejected bids Aug. 22, reconstr. section of Northern Trans-Provincial Hy. between Blakwater Rd. and Sweden Creek. New Bids Sept. 6. CD 8/29, under LB.

**William J. Lundrigan, Ltd.,** 25 Poplar Rd., Corner Brook, Newfoundland, CA **$384,279.** street reconstr., incl. 8,000 lin. ft. excav., grading, sewers, paving, etc., CORNER BROOK, NEWFOUNDLAND. City, R. S. Elford, clk. Corner Brook, Newfoundland. Bids Aug. 20, awarded Aug. 24.

**ONTARIO**—Dpt. Hys., Parliament Bldgs., Toronto,

**Dibblee Constr. Co., Ltd.,** 384 Bank St., Ottawa, Ont., CA **$763,759.** Contract 56-148, gran. base, hot mix paving 10.28 mi. Hy. 401 from 0.22 mi. west of Aultsville Rd. westerly, Aultsville. Bids Aug. 29, awarded Sept. 3. CD 9/6, under LB.

**H. J. Morgan Constr. Co., Ltd.,** 2498 Yonge St., Toronto, Ont., CA **$218,800.** swimming pools, artificial ice rinks, dressing rooms, etc., recreation unit at Lawrence Ave. E., TORONTO, ONT. Scarborough Twp., 2001 Eglinton Ave. E., Toronto, Ont. Awarded Aug. 31. CD 1/20.

### BUILDINGS—LB & CA

**Milne & Nicholls Ltd.,** 57 Bloor St. W., Toronto, Ont., LB **$750,000.** (11 bidders) PLANT and OFFICE addns., TORONTO, ONT. Barber-Greene Canada Ltd., Don Mills, Toronto, Ont. Bids Aug. 28. CD 8/8.

## LATIN AMERICA

### HEAVY CONSTRUCTION—LB & CA

**Krupp Works,** Essen, Germany. CA **$750,000.** Lasvacas Bridge to connect Guatemala City with Atlantic Hy., GUATEMALA CITY, GUATEMALA. Ministry of P. Wks., Guatemala City, Guatemala.

# PROPOSED PROJECTS

## WATER SUPPLY

Ill., **Collinsvile**—City, Albert Delbartes, mayor, City Hall, WW system extens., imprvs., incl. filtration and softening plant with changes in well structure and pumping; constr. large main in Vandalia St.; and main in Clay St. and Lebanon Rd. **$688,000.**

▲ **Tex., Beaumont**—City, city hall, voted bonds for water supply, Prob. Dam, **$3,225,000**; water mains, **$1,500,000**; water filtration plant, **$500,000**; water pumping, **$450,000**; water storage, **$250,000**; water service lines **$750,000.** Geo. J. Schaumburg, 2678 Laurel St., consult. engr. CD 8/27.

▲ **Tex., Dallas**—City and Dallas Co., City Hall, dam and reservoir, **$13,030,000**; 60 in. and 72 in. water pipe lines, **$58,760,000**; intake and pump station, **$2,941,200** (acct. Dam & Reservoir on Neches River in Henderson Co., Domestic & Industrial water supply). Forrest & Cotton, 803 Praetorian Bldg., consult. engrs. CD 3/31.

**Que., St. Jerome**—Village, Town Hall, filtration plant, water supply sys. imprvs. **$800,000.** Lalonde, Girouard & Letendre, 7379 St. Hubert St., Montreal, consult. engrs.

## SEWERS, WASTE DISPOSAL

▲ **Calif., Sacramento**—Sacramento Co. Sanitation Dist. No. 3, County Dpt. P. Wks., 827 7th St., voted bonds, sewage facilities. **$1,700,000.**

▲ **N. J., Linden**—City, City Hall, incinerator plant, **$1,500,000.** James F. Davis, City Hall, consult. engrs.

**Wash., Des Moines**—Des Moines Sewer Dist., Des Moines, bond election Nov. 6, sewerage sys., treatment plant **$700,000.** Hill & Ingman, 1728 E. Madison St., Seattle, consult. engrs. CD 12/20/46.

## STREETS AND ROADS

▲ **OHIO**—State Hy. Dpt., Columbus, Zone 15,

**Richland Co.**—relocation, rebuilding of Rte. 13 south of Mansfield to Knox Co. line, incl. Belleville by-pass 2 mi. of 2-lane divided hy. outside of Mansfield and 2 lanes for remaining 11 mi. **$6,000,000.** Shaffer, Parrett & Assoc., Mansfield, consult. engrs.

▲ **Okla., Enid**—Garfield Co., voted bonds for county highways. **$1,300,000.** F. W. Denner, c/o owner, engr. CD 7/17.

▲ **PENNSYLVANIA**—State Hy. Dpt., 506 N. Office Bldg., Harrisburg,

**Erie Co.**—redesigning 46 mi. Erie Thruway, project was formerly under Penn. Turnpike Commission. **$50,000,000.** Swindell Dressler Corp., Aspinwall, Pittsburgh, and Michael Baker Jr., Rochester, consult. engrs. CD 5/16/49.

## EARTHWORK, WATERWAYS

▲† **Arizona and Colorado**—Bureau Reclamation, Dpt. Interior, Bldg. 53, Denver Federal Center, Denver, Colo., Glen Canyon Unit, Glen Canyon Dam and Reservoir and the Glen Canyon power plant access road, Glen Canyon Diversion Tunnel, administration bldgs., municipal water supply and sewerage sys. and housing units. **$9,277,000** appropriated. CD 4/27.

† **Arizona, California and Nevada**—Bureau Reclamation, Dpt. Interior, Denver Federal Center, Denver, Colo., Parker-Davis Dam project to enlarge various substations, Parker-Davis Project. **$556,439** appropriated.

▲† **Arizona**—Bureau Reclamation, Dpt. Interior, Denver Federal Center, Denver, Colo., completion of Mohawk Unit Laterals and other features of Wellton Mohawk Distribution system, Gila Project. **$1,321,079** appropriated.

† **Colorado**—Bureau Reclamation, Dpt. Interior, Denver Federal Center, Denver, initiation of constr. on Colorado-Big Thompson power plant (4,500-kw. capacity), switchyard, and connecting transmission line, Colorado-Big Thompson Project. **$594,480** appropriated.

▲† **Colorado**—Bureau Reclamation, Dpt. Interior, Denver Federal Center, Denver, first section of the Southside Canal, Collbran Project. **$1,000,000** appropriated. CD 9/19/44.

▲† **Idaho and Wyoming**—Bureau Reclamation, Dpt. Interior, Denver Federal Center, Denver, Colo., continue constr. of Palisades Dam, powerplant, switchyard and transmission line, Palisades Project. **$6,007,000** appropriated. CD 9/14/44.

▲† **Idaho**—Bureau Reclamation, Dpt. Interior, Denver Federal Center, Denver, Colo., continue constr. on pumping plant, wells, canals, and other irrigation facilities, Michaud Flats Project. **$2,522,304.** CD 9/14/44.

▲† **Idaho**—Bureau Reclamation, Dpt. Interior, Denver Federal Center, Denver, Colo., north side pumping division, to complete constr. on Unit A pumping plant, and continue work on wells, canals and laterals, Minidoka Project. **$2,780,550** appropriated. CD 9/14/44.

† **Montana**—Bureau Reclamation, Dpt. Interior, Bldg. 53, Denver Federal Center, Denver, Colo., Sun River Proj., Greenfields Div., to continue work on waterways and structures on canals, drains. **$160,000.** CD 5/24/44.

† **Montana**—Bureau Reclamation, Dpt. Interior, Bldg. 53, Denver Federal Center, Denver, Colo., Lower Marias Unit, Missouri River Basin, cleanup work on Tiber Dam and Reservoir. **$115,000.** CD 5/25/44.

▲† **Montana**—Bureau Reclamation, Dpt. Interior, Bldg. 53, Denver Federal Center, Denver, Colo., Helena Valley Unit, Missouri River Basin Proj., for continuation of Helena Valley pumping plant tunnel for Helena Valley Dam and regulating reservoir, **$3,199,000.** CD 9/8/44, 5/25/44.

▲ **Nebraska**—York County Rural Public Power Dist., York, constr. facilities to service irrigation wells, York, Fillmore and Hamilton Counties. **$2,050,000.** Raymond H. Reed & Co., Columbus, consult. engr. CD 6/6.

▲† **New Mexico**—Bureau Reclamation, Dpt. Interior, Bldg. 53, Denver Federal Center, Denver, Colo., Middle Rio Grande Project, channelization imprvs. will continue to be extended in Socorro Area and will be completed in Espanola Valley Area. **$3,523,000** appropriated. CD 9/7/44.

▲† **Ohio and West Virginia**—U. S. Eng., 237 Fourth Ave., Huntington, W. Va., plans by Gannett, Fleming, Corddry & Carpenter, Inc., archt.-consult. engr., 600 N. Second St., Harrisburg, Pa., design of Dillon Dam, Licking River. **$19,000,000** (no appropriation). CD 6/17/43, under D. C., Wash.

† **Oklahoma**—Bureau Reclamation, Dpt. Interior, Denver Federal Center, Denver, Colo., Washita Project, constr. Fort Cobb Dam and Reservoir. **$500,000** appropriated.

▲† **Oregon**—Bureau Reclamation, Dpt. Interior, Denver Federal Center, Denver, Colo. Rogue River Basin Proj., Talent Division, constr. Howard Prairie Dam and Reservoir and Keene Creek Dam and Reservoir, collection canals, delivery canals and laterals and the Green Spring Power Plant. **$2,400,000** appropriated.

▲† **Oregon**—Bureau Reclamation, Dpt. Interior, Denver Federal Center, Denver, Colo., Deschutes Project, North Unit, continuation of constr. of Haystack Dam and equalizing reservoir. **$1,034,768** appropriated.

## AIRPORTS

**Kan., Salina**—AIRPORT—City, H. E. Peterson, clk., City Hall, imprv. municipal airport incl. runway extensions, admin. bldg., etc. **$750,000.** Wilson Eng. Co., 705 E. Crawford St., consult. engrs. CD 8/22.

## LATIN AMERICA

**Mexico, Aguascalientes**—HOSPITAL—Instituto Mexicano del Seguro Social (Mexican Social Insurance Institute), Mexico City, plans 250-bed general hospital. **$800,000.**

## PUBLIC BUILDINGS

▲ **Ark., Little Rock**—UNIVERSITY BUILDINGS—University of Arkansas Medical Center, c/o T. C. Carlson, secy.-treas., Fayetteville, plans by Erhart, Eichenbaum & Rauch, 201 Chester St., student center, men's dormitory, women's dormitory, family housing, 12th and McAlmont St. **$2,016,200.**

**Calif., Barstow**—SCHOOL—Barstow School Dist., plans by Kistner, Wright & Wright, 1125 W. 6th St., Los Angeles, Junior High School. **$700,000.** CD 4/26/55.

▲ **Calif., Berkeley**—RESIDENCE HALLS—Regents of University of Calif., Admin. Bldg., plans by Warnecke & Warnecke, Financial Center Bldg., Oakland, 3 residence units of residence halls at University of Calif. **$5,000,000.** CD 7/23.

**Calif., Hayward**—SCHOOL—La Vista Elementary School Dist., c/o Supt., 27845 Western Rd., plans by Anderson & Simonds, 2800 Park Blvd., Oakland, Tyrell Ave. Elementary School, **$879,583.** CD 2/27.

**Calif., Walnut Creek**—SCHOOL—Walnut Creek Elementary School Dist., c/o Supt., plans by Schmidts, Hardman & Wong, 1320 University Ave., Barkeley, constr. Indian & Valley Elementary School, **$519,852.**

**Calif., Yuba City**—HOSPITAL—Fremont Hospital Bd. Directors, 815 Plumas St., plans by Mr. Mitchel Van Bourg, Hotel Claremont, Berkeley, Fremont Hospital. **$776,914.** CD 8/13.

▲ **Conn., Hartford**—HOUSING—Hartford Housing Auth., 846 Asylum Ave., plans by Carl Malmfeldt Assocs., 36 Pearl St., 60 unit duplex co-operative housing, Dutch Point. **$7,200,000.** CD 9/13/49.

▲ **Conn., Milford**—HIGH SCHOOL—Town, Town Hall, East High School, Pond Point Ave. **$1,300,000.**

**Conn., Somers**—SCHOOL—Town, Town Hall, plans by Olson, Miller & Assocs., 742 Asylum Ave., Hartford high school, **$700,000.** CD 5/16.

▲ **Conn., Stamford**—HIGH SCHOOL—Town plans by Ralph Eberlin, 123 E. 77 St., New York, N. Y., high school, Newfield Ave., North Stamford. **$2,500,000.** CD 8/2.

▲ **Ill., Waukegan**—SCHOOLS—School Dist., 61, 574 McAllister Ave., plans by Ganster & Hennighausen, 222 Washington St., (a) Little Ford Grade School, Blanchard Rd. (b) Greenwood School addn., North Ave. (c) Hyde Park School addn., 1525 Hyde Park Ave. (d) Glenwood Grade School, Northbrook Ave., (e) Oakdale Grade School, McAree Rd. and Glen Flora Ave., **$1,272,000.**

**Ind., Boonville**—AUDITORIUM, etc.—Boonville-Boon Twp. Bd. Corp., Boonville, plans by Lester W. Routt, Vincennes, 1-story, masonry, steel, concrete auditorium, classroom for high school. **$900,000.** CD 2/18/53.

▲ **Ind., Indianapolis**—CIVIC AUDITORIUM—Bd. Comrs. Marion Co., Court House, civic auditorium. **$7,500,000.**

**Iowa, Greenfield**—SCHOOL—Bd. Educ., plans by Smith, Voorhees, Jensen, Silletto & Assocs., 206 Davidson Bldg., Des Moines, grade school, **$595,000.**

▲ **Mass., Shelburne**—SCHOOL—Towns Shelburne, Buckland, Colrain, Health, Hawley and Charlemont, J. Roger Smith, Crmn. Comm., 40 Church St., Shelburne Falls, plans by Warren H. Ashley, 967 Farmington Ave., West Hartford, Conn., Mohawk Trail Regional High School, **$1,200,000.** Constr. 1957. Marchant & Minges, 1007 Farmington Ave., West Hartford, Conn., mech. and structural engrs. CD 4/24.

▲ **Mich., Kalamazoo**—SCIENCE, etc.—State, A. N. Langius, dir. State Bldg. Dpt., Lewis Cass Bldg., Lansing, natural science bldg., **$2,000,000**; industrial arts bldg., **$960,000**; auditorium-classrooms, **$2,000,000,** CD 2/9/53; education classroom, **$3,000,000**; health service bldg., **$500,000**; field house, **$1,500,000**; English Language and Speech clinic **$1,750,000**; music bldg. addn., **$750,000,** Western Michigan College of Education.

**Mo., Warrensburg**—DORMITORY—Central Missouri State College, plans by Everitt & Keleti, R. A. Long Bldg., Kansas City, Mo., dormitory, **$542,000.**

▲ **Mich., Oak Park**—SCHOOLS—City, Bd. Educ., 22000 Kipling St., voted bonds Aug. 27, schools. **$2,500,000.** O'Dell, Hewlett & Luckenbach, 950 N. Hunter Blvd., Birmingham, archts. CD 7/20.

▲ Mich., **Utica**—SCHOOLS—Bd. Educ., voted bonds Aug. 27, for Junior High School and elementary schools, **$3,500,000.**

▲ Minn., **Cloquet**—SCHOOL—Bd. Educ., G. M. Micke, clk., plans by Toltz, King, Duvall, Anderson & Assoc., 1509 Pioneer Bldg., St. Paul, elementary school, **$675,000**; gymnasium addn., swimming pool for existing high school, **$550,000.**

▲ N. J., **Cape May**—SCHOOL—Cape May School Dist., Cape May, plans by Edwards & Green, 17 S. 5 St., Camden, Regional Junior-Senior High School. **$1,200,000.** CD 2/21.

▲ N. J., **Millville**—SCHOOL—Millville Bd. Educ., Millville, plans by Howell Lewis Shay, Packard Bldg., Phila., Pa., Memorial High School addns., alterations. **$1,000,000.** CD 1/4.

▲ N. J., **Rumson**—SCHOOL—Bd. Educ., Rumson-Fair Haven, Rumson, plans by James Swackhamer of Jay C. Van Nuys Associates, 205 W. Main St., Somerville, regional high school addn., **$1,205,508.**

N. J., **West Long Branch**—SCHOOL—Bd. Educ., West Long Branch, 12 classroom addn. to Locust Ave. School. **$500,000.**

N. Y., **Buffalo**—COURT, etc.—Donald H. Jaffey Enterprises, Rochester, addn. of third floor to Delaware Court Bldg. and constr. new 2 story office bldg. on Chippewa containing 10-15,000 sq. ft. **$700,000.** Start work next year.

† N. Y., **Oswego**—TRAINING CENTER—U. S. Eng., 111 E. 16 St., New York Zone 3, U. S. A. R. Training Center, Lafayette and Park Sts. **$583,000.**

▲ N. C., **Raleigh**—CITY HALL—City, W. H. Carper, mgr., plans by Small & Boaz, 615 Hillsboro St., city hall, Hillsboro, Morgan and Dawson Sts. **$1,650,000.** CD 6/11.

▲ Okla., **Bartlesville**—HIGH SCHOOL—Bd. Educ., Bartlesville, bond election Oct. 16, high school, **$1,300,000.** CD 10/26.

▲ Okla., **Stillwater**—APARTMENTS—Oklahoma Agricultural & Mechanical College, apartments for married students, **$2,250,000.** CD 8/13/45.

▲ Pa., **McKees Rocks**—SCHOOL—Montour Joint School Dist., R.D. 1, plans by Chas. M. and Edw. Stotz, 106 Sixth Ave., Pittsburgh, Junior-Senior High School, Robinson Twp. **$2,000,000.**

▲ Pa., **Pittsburgh**—HOUSING—Pittsburgh Housing Auth., 200 Ross St., 999 unit low rental housing, Northside, North View Heights. **$14,000,000.** CD 8/27.

▲ Pa., **Washington**—SCHOOL—Northern Butler Joint School System, R.D.N., Washington, plans by B. J. McCandless, 239 Fourth St., Ellwood City, 2 story, brick, steel Senior High School, Concord Twp. **$2,000,000.**

▲ Tex., **Canyon**—COLLEGE ADDNS.—West Texas State College. plans by Macon O. Carder, Fisk M&P Bldg., Amarillo, college addns. **$9,000,000.**

▲ Wash., **Seattle**—SCHOOLS—School Dist. No. 1, 815 4 Ave. N., $25,000,000 bond election Nov. 6, addns. to Ballard, Franklin and Lincoln High Schools, **$1,000,000** each; 3 Junior High Schools at Olympic Golf course in Southeast Seattle and at Bitter Lake, **$2,500,000** each; addn. to Woodrow Wilson Junior High School, **$750,000**; Roxhill Elementary School, **$700,000**; 5 elementary schools at Rainier View, Sand Point, Victory Heights, Schmitz Park and Cedar Park, **$625,000** each; 2 elementary schools at West Broadview and North View Ridge, **$600,000** each; addns. to Harrison, Pinehurst, Arbor Heights and Whitworth Schools, **$400,000** each. CD 8/15.

Wash., **Vancouver**—LIBRARY—Clark-Skamania Inter-County Rural Library Bd., 1511 Main St., library bldg., **$500,000.**

Wash, **Yakima**—LIBRARY—City, City Hall, Yakima Co., County Court House, $400,000 bond election Nov. 6, library. **$800,000.** CD 1/14/53.

Ont., **Toronto**—SCHOOL—Toronto Bd. Educ., 155 College St., plans by F. C. Etherington, owners, ch. archt., Danforth Technical school addn., 840 Greenwood Ave., **$676,000.** CD 12/15/43.

▲ Ont., **Welland**—HOSPITAL—Welland General Hospital Bd., Welland, 257 bed hospital between King St. and Plymouth Rd., **$3,750,000.**

## COMMERCIAL BUILDINGS

▲ Ala., **Vestavia Hills**—HOMES—Byrd Real Estate Co., Inc., 322 N. 21 St., Birmingham, plans by Charles McCauley, Jackson Bldg., Birmingham, 200 custom built homes in Southridge Addn. to Vestavia Hills. **$1,000,000.**

Ala., **Vestavia Hills**—SHOPPING CENTER—Byrd Real Estate Co., 322 N. 21 St., Birmingham, plans by Charles McCauley, Jackson Bldg., Birmingham, shopping center addn., Montgomery Hy. parking area. **$750,000.** Completion Spring, 1957.

Calif., **Milpitas**—UNION HALL AND RECREATION—United Auto Workers Union, c/o Clayton Van Wagner, archt., Financial Center Bldg., Oakland, union hall and recreation bldg., masonry and frame constr. to consist of offices, meeting rooms, gym, platform, kitchen, swimming pool, near here. **$500,000.**

Calif., **San Jose**—NOVITIATE—Sister's of the Holy Family, c/o Martin Rist, archt., 320 Judah St., San Francisco, 2 story, rein.-con. novitiate bldg. **$700,000.**

▲ Calif., **San Mateo**—APARTMENT HOUSE—Owner, c/o Angus McSweeney, archt., 62 Howard St., San Francisco, 9 structures, 60 units and garages for apartment house, on El Camino Real. **$1,000,000.**

▲ Conn., **Manchester**—HOUSING DEVELOPMENT—Burnham Estates, 244 Main St., 72 house development, Burnham Rd. **$1,208,880.**

▲ Conn., **South Windsor**—HOUSES—Morton Miller, Avery St., 215 houses, Avery Heights, **$2,150,000.**

▲ D. C., **Wash.**—OFFICE—Peoples Life Insurance Co., 1343 "H" St. N.W., plans by Mills, Petticord & Mills, 3308 14 St. N.W., Wash., D. C., 3 story home office, New Hampshire Ave., G, F and 25 Sts. N.W. **$2,000,000.**

▲ Ill., **Libertyville**—REHABILITATION CENTER—Owner, c/o Howard Kessler & Assocs., archts., 845 Chicago Ave., Evanston, childrens rehabilitation center. **$3,000,000.**

▲ Ill., **Park Ridge**—HOTEL—Mack Supre & Assocs., 201 E. Walton Pl., Chicago, plans by Hausner & Macsai, 104 S. Michigan Ave., Chicago, 4 story, bsmnt., 50,000 sq. ft. brick, stone Park Ridge Plaza Hotel, incl. 2 swimming pools, underground parking garage, Touhy and Mecham Aves., **$2,500,000.** Paul Rogers, 3020 E. Jackson Blvd., Chicago, consult. engr.

Ind., **Fort Wayne**—ENGINEERING-SCIENCE—Trustees Indiana Technical College, Anthony Blvd., engineering and science bldg., college campus. **$900,000.**

Mass., **Danvers**—SCHOOL, etc.—R. C. Church of the Annunciation, Rev. Father O'Brien, pastor, c/o Chancery Office, No. 1 Lake St., Brighton, plans by John A. McPherson, 250 Huntington Ave., Boston, parochial school and convent, Otis St. **$800,000.** constr. 1957.

Mass., **Hingham**—DIAL BLDG.—New England Telephone & Telegraph Co., 185 Franklin St., Boston, plans by John M. Gray Co., 169 High St., Boston, 3 story, bsmnt., 80x146 ft. dial bldg. and test center, Approx. **$500,000.** Bids asked in September.

▲ Mass., **Newton**—SHOPPING CENTER—State Street Realty, Inc., Robert Chick, pres., 649 Wellesley St., Weston, plans by Irving W. Rutherford, 49 Garden St., Hartford, Conn., shopping center, Chestnut Hill adjacent to present shopping center, **$8,000,000.** (**Correction**—location of project). CD 8/7, under **Mass., Brookline.**

Mich., **Royal Oak**—CHURCH—St. John's Episcopal Parish, Charles C. Jatho, pastor, 115 W. Woodward, plans by O'Dell, Hewlett & Luckenback, 950 N. Hunter Blvd., Birmingham, church. **$500,000.**

▲ Mo., **St. Louis**—NURSING HOME—Lutheran Altenheim Society, Erwin H. Storck, bd. chn., 8721 Hall's Ferry Rd., Zone 15, nursing home bldg., with about 150 beds, rear of Lutheran Altenheim. Approx. **$1,500,000.**

▲ N. J., **Perth Amboy**—HOUSING—Nassau Management Co., 2 Park Ave., New York 16, N. Y., Title I housing to be called George B. Willok Apartments for 275 families. Rector and Smith Sts., incl. park and shopping center, **$4,000,000.**

▲ N. J., **Trenton**—OFFICE—New Jersey Bell Telephone Co., 540 S. Broad St., Newark, central office bldg. **$2,000,000.**

▲ N. Y., **Albany**—MOTOR HOTEL, etc.—Neil Hellman, c/o Leon M. Einhorn, archt., 93 State St., thruway motor hotel and restaurant, Washington Ave. **$1,000,000.**

N. Y., **Elmira**—DORMITORY—Elmira College, dormitory, **$665,000.**

▲ N. Y., **New York**—NEWSPAPER PLANT—The New York Times, 229 W. 43 St., Zone 36, plans by Eggers & Higgins, 100 E. 42 St., Zone 17, 14 story newspaper plant, 41-115 West End Ave. from 62 to 65 Sts. **$40,000,000.** Weiskopf & Pickworth, 2 W. 45 St., Zone 19, consult. engrs. CD 6/30/55.

▲ N. Y., **New York**—OFFICE—Second-Forty Second St. Corp., 285 Madison Ave., Zone 17, plans by Pomerance & Breines, 33 W. 46 St., Zone 19, 19 story office bldg. 785-791 Second Ave. **$2,500,000.**

▲ N. Y., **New York**—OFFICE—Yondur Realty Co., c/o Richard Roth, archt., 575 Madison Ave., Zone 22, 21 story office bldg., east side of Third Ave. between 41 and 42 Sts. **$4,000,000.**

▲ N. Y., **Tarrytown**—HOTEL-MOTEL—Muller-Miller Interests, c/o Benjamin Whitestone, 11 W. 42 St., New York, plans by Samuel Glaser Assoc., 234 Clarendon St., Boston, Mass., 5 story, bsmnt. highway-urban hotel-motel. **$2,000,000.** Sheraton Corp. of America, 470 Atlantic Ave., Boston, Mass., lessee. Bids December 1956.

▲ N. C., **Winston-Salem**—SCHOOL—Wake Forest College, Dr. Harold Tribble, pres., plans by Larson & Larson, 331 Madison Ave., New York, N. Y., addn. to Bowman Gray School of Medicine, **$1,000,000.** CD 10/21/46.

▲ O., **Cleveland**—HOTEL, etc.—Maxwell House, 1805 E. 40 St., Zone 3, plans by Madison, Madison & Assoc., Architects & Engineers, 1335 E. 105 St., Zone 6, 112 room air-conditioned hotel and swimming club with 212 Cabanas, Euclid and Green Rds. **$1,500,000.**

Pa., **Erie**—DORMITORY—Gannon College, dormitory, **$630,000.**

▲ Pa., **Strafford**—SHOPPING CENTER—Great Valley Beechmont Ave., plans by Wm. R. Perry, Dormant Bank Bldg., Pittsburgh, Pa., addns. to central sect. of seminary, Beechmont Ave. **$2,000,000.** W. H. Frick, Century Bldg., Pittsburgh, Pa., consult. engrs. Constr. in 1956.

Pa., **Strafford**—SHOPPING CENTER—Great Valley Square Corp., c/o Albert D. Monteith, Paugh Rd., Sugartown, plans by Karl F. Otto, 24 W. Montgomery Ave., Ardmore, shopping center, Rte. 202 and Rte. 83. **$5,000,000.**

▲ Tex., **Arlington**—HOTEL—Stockholders Corp., c/o Western Hills Hotel, Inc., 6451 Camp Bowie Blvd., Ft. Worth, 100 room masonry hotel, 6 miles north of Arlington, **$1,500,000.**

▲ Wash., **Yakima**—CLUB—Young Men's Christian Assn., Yakima, plans by Maloney & Whitney, Larson Bldg., club bldg. **$2,000,000.** Work to start in fall. CD 11/23.

▲ Alta., **Edmonton**—SHOPPING CENTER—Atlas Finance & Realty Corp. Ltd., Edmonton, plans by Makale, Hemmingway & Laubenthal, Edmonton, shopping center and 3,000 car parking area at St. Albert, 10 mi. northwest of here. **$4,380,000.**

▲ Ont., **London**—OFFICE—Minnesota Mining & Mfg. Co., K. J. Shea, mgr., Oxford St. E., plans by Prack & Prack, James St., Hamilton, 2 story, bsmnt., brick, stone office bldg. to contain offices, display rooms, conference rooms, employees cafeteria, **$1,000,000.**

Que., **Montreal**—SHOPPING CENTER—Maxwell Cummings & Sons, 1390 Sherbrooke St. W., plans by S. R. Shenkman, 3777 Cote des Neiges Rd., and Iran Martin, 1200 St. Alexander St., steel, brick walls shopping center, Laurentide Blvd. in Pont Viau area. **$500,000.**

Que., **Riviere du Moulin**—DWELLINGS—J. A. Hamel, Riviere du Moulin, constr. 60 dwellings on outskirts of town, near Chicoutimi. **$700,000.**

## INDUSTRIAL BUILDINGS

▲ Conn., **Devon**—GENERATOR PLANT, etc.—Connecticut Light & Power Co., Selden St., Berlin, 106-kw turbo generator plant at company's existing plant. **$3,000,000**; boiler room addn. at electric power plant, **$276,000.**

▲ Ill., **Chicago**—PLANT—Acme Steel Co., 2836 Archer Ave., Zone 8, plant to produce semi-finished steel, Torrence Ave. and 138 St., **$15,000,000.**

Tex., **Houston**—PLANT—Huey & Philp Co., 1310 Preston, plant (restaurant supplies) off Jackson St. **$175,000.**

▲ Mass., **Holyoke**—POWER PLANT—Holyoke Water Power Co., 1 Canal St., power plant in Smith's Ferry Section, **$15,000,000,** Jackson & Moreland, 600 Park Square Bldg. Boston, consult. engrs.

▲ N. C., **Canton**—PAPER MILL—Champion Paper & Fibre Co., 601 N. "B" St., Hamilton, O., 2 story, 124,000 sq. ft. paper mill; 4 story, 50,000 sq. ft. stock preparation house; 43,000 sq. ft. finishing and shipping bldg. **$1,000,000.**

▲ O., **Hudson**—FACTORY—Euclid Road Machinery Div., General Motors Corp., 1361 Chardon Rd., Cleveland, Zone 17, factory to mfr. earth moving and road building equip., 409-acre site 1 mi. south of here. **$100,000,000.**

▲ N. B., **Havelock**—PLANT—Maritime Cement Co. Ltd., Canada Cement Bldg., Phillip's Sq., Montreal, Que., cement plant, exten., addnl. kiln. **$3,000,000.**

▲ Ont., **Adelaide**—SALT PLANT—Midrim Mining Ltd., 25 Adelaide St. W., Toronto, salt plant, 1 mi. northwest of here. **$3,500,000.**

▲ Que., **Asbestos**—MILL—Canadian Johns-Manville Co., Ltd., Sun Life Bldg., Montreal, plans by Surveyor, Nenninger & Chenevert, 1440 St. Catherine St. W., Montreal, 11 story asbestos mill exten. **$3,000,000.** CD 11/23/50.

## UNCLASSIFIED

▲ Ind., **Indianapolis**—TELEVISION STUDIO—Television Station WTTV, 539 S. Walnut St., Bloomington, television broadcasting studio and 350-ft. microwave tower, Bluff Rd. **$1,000,000.**

▲ Ky., **Covington**—COLISEUM, etc.—Covington Civic Coliseum Comn., City Hall, coliseum, stadium, parking, **$1,500,000.**

**Montana**—PIPE LINES—Powder River Pipe Line Co., Billings, 20 mi. 6 in. crude pipe line, from near Moorcraft to Butte Pipe Line Co. line; also, includes gathering system, Moorcraft, **$554,000.**

▲ N. J., **Hoboken**—PIER—Bethlehem Shipbuilding Div. of Bethlehem Steel, 25 Broadway, New York, N. Y., private pier at Hoboken waterfront properites. **$2,000,000.**

▲ **Pennsylvania**—TUNNEL—Pennsylvania Dpt. Hys., Harrisburg, Fort Pit Tunnel, Penn-Lincoln Highway. Bids in October. Project taken over from Penn. Tunnel Comn., **$20,000,000-$30,000,000.** CD 3/26

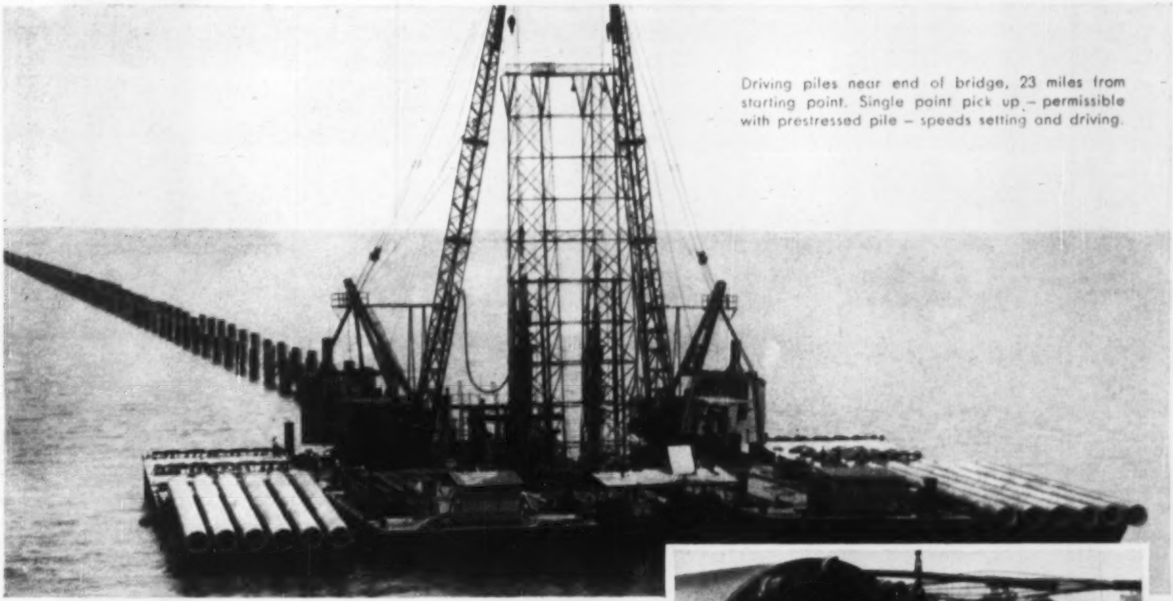
**South Carolina**—RURAL DISTRIBUTION LINES—Fairfield Elec. Co-op., Winnsboro, S. C., 220 mi. electric distr. line and system imprvs., Fairfield Co., **$515,000.**

**South Dakota**—SUB-STATION—Dakotas Elec. Co-operative, Bismarck, N. D., 30,000 kva sub-station at Glenham, **$729,114.**

▲ Va., **Norfolk**—ENLARGING YARD—Norfolk & Western Ry. Co., A. B. Stone, ch. engr., General Office Bldg., Roanoke, Zone 17, enlarge Potlock Yard, incl. 24 mi. track and remote control switches. **$1,000,000.**

▲ Ont., **Toronto**—RAPID TRANSIT SUBWAY—Toronto Transit Comn., 35 Yonge St., engineers appointed for survey of rapid transit subway, Union Station to University Ave. north on University Ave. to Bloor St. about 1½ mi. Over **$10,000,000.** DeLeuw Cather & Co. of Canada Ltd., 52 St. Clair Ave. E., consult. engrs. W. S. Atkins & Assocs., Ltd., 199 Bay St., tunnel design and type engrs. Norman D. Wilson, 128 Glen Rd., coordinating engr. Racey MacCallum & Assocs., Ltd., 20 Carlton St., soil test engrs. A. D. Margison & Assocs., Ltd., 30 Eglinton Ave. E., shop designs engrs. CD 1/11/55.

# PRESTRESSED CONCRETE
# 10th ANNIVERSARY



Driving piles near end of bridge, 23 miles from starting point. Single point pick up – permissible with prestressed pile – speeds setting and driving.

TEN YEARS AGO this month the first successful application of prestressed concrete in the U. S. was completed – the prestressed concrete portion of Roebling's Chicago Warehouse. Four years later the first prestressed concrete bridges in this country were completed – tensioned, of course, with Roebling materials. And during that interval we increased our knowledge through constant research plus the design and fabrication of prestressed concrete decks on several of our Central and South American suspension bridges.

As this new material has caught on with ever-increasing rapidity, engineers and fabricators have turned to us for information on materials and methods. This collaboration has not only helped *them* but has kept *us* constantly abreast of new developments and new requirements in tensioning elements.

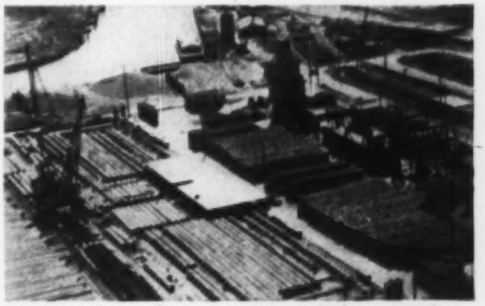
An example of Roebling's position as America's foremost supplier of tensioning materials is the Lake Pontchartrain Bridge, utilizing 123,000 miles of .192" diameter Roebling wire for prestressing the piles supporting this 24 mile long structure.

When you need tensioning materials or have a problem in prestressed concrete, why not turn to headquarters for suggestions and advice on specific applications? Contact Construction Materials Division, John A. Roebling's Sons Corporation, Trenton 2, New Jersey.

●

*Builders; Louisiana Bridge Co., Mandeville, La. (a joint venture of Brown & Root, Inc., Houston, Texas and T. L. James & Company, Inc., Ruston, La.). Designers, Palmer & Baker, Inc., Mobile, Alabama.*

Post-tensioning the cables. Piles are 54" outside diameter, 80 and 96 feet long, and stressed with 12 cables each containing 12 wires, .192" in diameter.



Louisiana Bridge Company casting yard where more than 900 feet of the Cen-Vi-Ro type piles were fabricated per day under special license agreement with Raymond Concrete Pile Company of New York.

# ROEBLING

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# Bids—Low Bids—Contracts—Second Section

## NEW ENGLAND

### HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
BRIDGES
September 24 Connecticut September 25 Massachusetts
STREETS AND ROADS
September 24 Connecticut September 25 Massachusetts
September 28 Vermont

### BUILDINGS—LB & CA

▲ **Thompson Constr. Corp.**, 11 N. Pearl St., Albany, N. Y. CA Approx. **$1,100,000.** MANUFACTURING BLDG., HANCOCK, MASS. General Electric Realty Co., 202 State St., Schenectady, N. Y. Jenks & Ballou. Industrial Trust Bldg., Providence, R. I., engrs.

O. **Ahlborg & Sons, Inc.**, 48 Molter St., Cranston, R. I. CA **$983,600**, est. $950,000. 2 women's DORMITORIES, State Proj. URI 3-HHFA Proj. RI 37-CH-1. University of Rhole Island, KINGSTON, R. I. State R. I. & Prov. Plants, Div. Purchase, State House, Providence, R. I. Bids July 18. CD 7/25, under LB.

## MIDDLE ATLANTIC

### HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
BRIDGES
October 2 New Jersey
STREETS AND ROADS
September 28 Pennsylvania October 2 New Jersey

▲† **New York**—BA About 11/14—U. S. Eng., Engineer Park, Niagara and Bridge Sts., Buffalo, **Zone 7**, superstructure of South Cornwall Channel International High-Level Bridge and Mainland approach fill, St. Lawrence Seaway, St. Lawrence River, consisting of superstructure of suspension bridge, main span 900 ft. long, two side spans each 450 ft. long; 2,145 ft. viaduct spans, 690 ft. on south or New York State side and 1,455 ft. on north or Cornwall Island side in Canada, six 90 ft., fifteen 75 ft., eight 60 ft. spans consisting of plate girders 18 ft. apart resting on concrete piers, for St. Lawrence Seaway Development Corp., CIVENG-30-023-57-18. CD 9/9/54.

### HEAVY CONSTRUCTION—LB & CA

▲ **Peerless Constr. Co., Inc.**, 107 Mamaroneck Ave., White Plains, N. Y. and **L. I. Waldman**, 40-01 29 St., Long Island City, N. Y. LB **$1,621,200.** reconstr. swing span and approaches of 145 Street bridge over Harlem River between Manhattan and Bronx Boros, NEW YORK, N. Y. Dpt. P. Wks., Municipal Bldg., New York 7, N. Y. Bids Sept. 12. CD 8/14.

▲ **NEW JERSEY**—State Hy. Dpt., State Hy. Office Bldg., 1035 Parkway Ave., Trenton,

**The Conduit & Foundation Corp.**, 158 N. 20 St., Phila., Pa., CA, **$3,158,217.** Contract 2, superstructure, Manahawkin Bay Bridge, Rte. 72, Section 5E, Stafford Twp. F 130 (6), Ocean Co. Bids Aug. 14, awarded Sept. 10. CD 8/17, under LB.

### BUILDINGS—LB & CA

▲ **Slattery Contg. Corp.**, 46-36 54 Ed., Maspeth, N. Y. LB **$2,521,298.** Contr. No. 1, foundations and structural steel work for city and municipal COURTS BLDG., Centre and White Sts., Manhattan Boro, NEW YORK, N. Y. Dpt. P. Wks., Municipal Bldg., New York 7, N. Y. Bids Sept. 12. CD 8/15.

▲ **Wilaka Constr. Co., Inc.**, 11 E. 44 St., New York 17, N. Y. LB **$1,629,000** (9 bidders) general constr., P. S. 105, Manhattan West 97 St. between Amsterdam and Columbus Aves., NEW YORK, N. Y. Bd. Educ., Bureau Constr., 42-15 Crescent St., Long Island City 1, N. Y. Bids Sept. 5. CD 7/31.

▲ **Suburban Greens Homes**, c/o Trylon Realty Co., 98-89 Queens Blvd., Forest Hills, N. Y. Owner Builds. Est. **$1,900,000.** 120 HOUSES on tract on Plainview Rd. south of Northern State Parkway, PLAINVIEW, N. Y.

▲ **A. Moore Lifter**, 808 West Ave., Jenkintown, Pa. Separate Contracts. **$2,200,000.** RESIDENTIAL DEVELOPMENT, Fitzwatertown Rd., ROSLYN, PA.

▲ **S. G. Mastriani**, Dunmore, Pa. CA **$2,000,000.** 1 story, brick, steel HOSPITAL addn., alterations, SCRANTON, PA. Mercy Hospital, 746 Jefferson Ave., Scranton, Pa. Bids Aug. 21. CD 8/20.

## SOUTH

### HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
BRIDGES
September 26 Louisiana
STREETS AND ROADS
September 26 Louiisana September 28 Kentucky

### HEAVY CONSTRUCTION—LB & CA

▲ **Rea Constr. Co.**, Pineville Rd., Charlotte, N. C. LB **$3,575,000.** Hoskins Filtration Plant, CHARLOTTE, N. C. City, City Hall, Charlotte, N. C. J. N. Pease & Co., Inc., 119½ E. 5 St., Charlotte, N. C. archt.-engr. Bids Aug. 31.

▲† **Ballenger Paving Co.**, Paris, S. C., CA, **$4,650,998.** runway rehabilitation, Dobbins Air Force Base, Marietta, Air Force Plant No. 6, for Lockheed Aircraft Corp. Ga. Division for the Dpt. of Air Force, DAWSONVILLE, GA. Lockheed Aircraft Corp., Georgia Div., Marietta, Ga. Bids Aug. 13. CD 7/20.

### BUILDINGS—LB & CA

▲ **Daniel Constr. Co., Inc.**, Box 2286, Greenville, S. C. CA Est. **$2,000,000.** 1 story, 135,000 sq. ft. PLANT to mfg. power saws, GASTONIA, N. C. Homelite Corp. (Div. Textron, Inc.), Riverside and Nelson Sts., Port Chester, N. Y. Ford, Bacon & Davis, Inc., 39 Broadway, New York, N. Y., engr.-archt. CD 9/10.

▲ **Enchanted Homes, Inc.**, N.E. 199 St., Miami, Fla. Owner Builds. **$2,000,000.** 100 RESIDENCES, Enchanted Lake, OJUS, FLA. Manfred Ungaro, 7123 Biscayne Blvd., Miami, Fla., archt.

▲ **F. H. McGraw Co.**, 51 E. 42 St., New York, N. Y., CA Est. **$50,000,000.** alumina PLANT, BURNSIDE, LA. Olin Revere Metals Co. (Olin Mathieson Chemical Co., Mathieson Bldg., Baltimore 3, Md. and Revere Copper & Brass Co., P. O. Box 111, Rome, N. Y.)

▲ **Lummus Co.**, 385 Madison Ave., New York 17, N. Y., CA Est. **$8,000,000.** design and construct ethylene oxide PLANT, GEISMAR, LA. Wyandotte Chemicals Corp., Alkali Square, Wyandotte, Mich. CD 7/17, under La., Baton Rouge.

## MIDDLE WEST

### BUILDINGS—BA

STATE HIGHWAY LETTINGS
BRIDGES
September 26 Michigan

### BUILDINGS—BA

▲ **Mich., Detroit**—HOSPITAL—BA 10/9—Rehabilitation Institute of Metropolitan Detroit, Inc., Harper Hospital, 3825 Brush St., hospital. $2,785,000. Albert Kahn Associated Architects & Engineers, Inc., 345 New Center Bldg., Detroit, archt. CD 6/29.

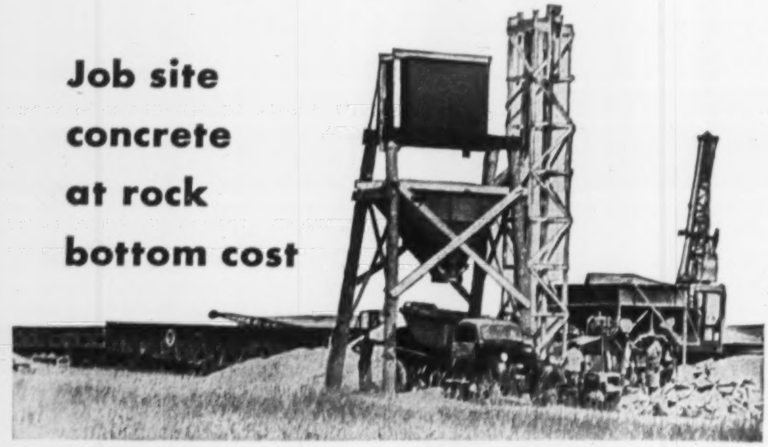
▲ **Mich., Ann Arbor**—ENGINEERING—BA 10/11—Regents of University of Michigan, W. K. Pierpont, vice pres., Plant Service Bldg. $1,950,000, Ann Arbor, Fluids Engineering Bldg. Proj. No. 78. CD 8/10, under LB.

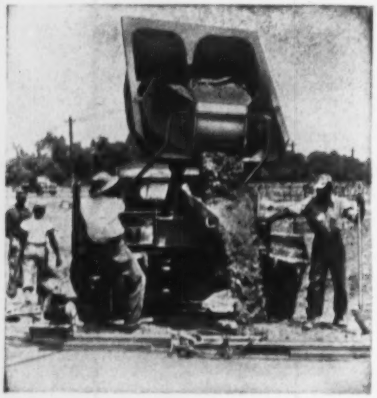
### HEAVY CONSTRUCTION—LB & CA

▲ **H. C. Price Co.**, Bartlesville, Okla., CA Michigan Sect.; **Houston Constr. Co.**, 2707 Ferndale St.,

(Continued on page 104)

Job site
concrete
at rock
bottom cost





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(Continued from page 102)

Houston, Tex. CA Ohio Sect. 117 mi. 22 in. natural gas pipe line from Defiance, O., to Benton Harbor, Mich; OHIO-MICHIGAN. Total est. **$16,000,000**. American-Louisiana Pipeline Co., 550 Griswold St., Detroit, Mich. Awarded Sept. 4.

**Brown & Root, Inc.**, 4100 Clinton Dr., Houston, Tex., CA Est. **$3,000,000,** natural gas compressor station, Rte. 66, north of Defiance, O. (Ohio-Michigan).

▲† **United Constr. Co.**, 1204 Lincoln St., Pittsburgh, Pa., LB **$1,655,000** (3 bidders) Nike Site No. 3[illegible], Warrensville, Cuyahoga Co., OHIO. U. S. Eng., New Post Office Bldg., Pittsburgh, Pa. Bids Sept. 11. CD 9/6.

▲ **Overland Constr. Co.**, 205 W. Wacker Dr., Chicago, Ill., CA, **$3,267,654,** structural steel and machinery for Northwest Hy. job. bascule bridge E. Ohio St. over R rr/w and North Branch Chicago River, CHICAGO, ILL. Cook Co., County Bldg., Chicago, Ill. Bids June 5, CD 6/19;

**M. J. Boyle & Co.**, 2480 Elston Ave., Chicago, Ill., CA, **$968,385,** substructure bridge, houses and grillage for bascule bridge over Chicago River on Northwest Expressway (Chicago, Ill.).

## BUILDINGS—LB & CA

▲ **George A. Fuller Co.**, 111 W. Washington St., Chicago, Ill., CA **$4,000,000**. 1 and 4 story, 150,000 sq. ft. brick, steel, concrete, processing PLANT, FACTORY and OFFICES, DANVILLE, ILL. Tee-Pak, Inc., 3520 S. Morgan St., Chicago, Ill. Bids Aug. 3. CD 7/19.

▲ **Grieghoff Co.**, 6661 French St., Detroit, Mich. LB **$1,853,533**. general constr. Chalfonte JUNIOR HIGH SCHOOL, Grosse Pointe Farms, GROSSE POINTE, MICH. Bd. Educ., Grosse Pointe Pub. Schools, 390 St. Clair Ave., Grosse Pointe 30, Mich. Bids Aug. 29, CD 8/10;

# WEST OF MISSISSIPPI

## HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
BRIDGES
September 25, 27 Kansas September 28 Minnesota
September 28 Missouri
STREETS AND ROADS
September 25, 27 Kansas September 28 Minnesota
September 28 Missouri

## BUILDINGS—BA

▲ **Ark., Okay**—PLANT—Bids Asked—Ideal Cement Co. Cris Dobbins, pres., Denver National Bank Bldg., Denver, Colo., expanding, remodeling cement plant, $2,000,000. CD 10/26.

## HEAVY CONSTRUCTION—LB & CA

▲ **Northern Natural Gas Co.**, 2223 Dodge St., Omaha, Neb. Owner Builds. Approx. **$5,000,000**. 163 mi. and 212 mi. branch lines of trunk pipe line from Sioux Falls to Aberdeen, SOUTH DAKOTA. F. B. Rabb, c/o owner, asst. ch. engr.

▲† **Robert E. McKee, General Contr., Inc.**, 221 Washington Ave., Santa Fe, N. M., LB **$14,370,000,** 6 story, 832,000 sq. ft. Cadet Quarters Bldg. Air Force Academy, COLORADO SPRINGS, COLO. Dpt. Air Force, P. O. Box 1670, Colorado Springs, Colo. Bids Sept. 11. CD 8/14.

## BUILDINGS—LB & CA

▲ **Sheehy Constr. Co.**, 1255 Larpenteur Ave. W., St. Paul, Minn. LB **$1,662,400** (5 bidders) general constr. 2 DORMITORIES AND ACTIVITIES BLDG. at Fairbault State School and Hospital, FAIRBAULT, MINN. State Dpt. Admin., State Capitol, St. Paul, Minn. Bids Sept. 6. CD 8/1.

**P. J. Gallagher & Sons,** Faribault, Minn. LB **$486,370** (3 bidders) mechanical work (Faribault, Minn.).

# FAR WEST

## HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
BRIDGES
October 3, 10 California
STREETS AND ROADS
October 10 California

## BUILDINGS—BA

▲ **Calif., Santa Monica**—AUDITORIUM—BA 10/23—City, City Hall, rein.-con. municipal auditorium. $2,500,000. Plans deposit $150. Welton Becket & Assocs., 5657 Wilshire Blvd., Los Angeles, archts. CD 11/21, under LB.

## HEAVY CONSTRUCTION—LB & CA

▲ **CALIFORNIA**—State Dpt. P. Wks., 1120 N St., Sacramento,

**Charles L. Harney, Inc.**, 575 Berry St., San Francisco, Calif., CA **$1,769,289** grading, paving 2.1 mi. Bayshore Freeway, widen 2 bridges, extend pedestrian undercrossing, constr. bridge, Santa Clara and San Mateo Counties. Bids Aug. 22, awarded Sept. 7. CD 8/28, under LB.

## BUILDINGS—LB & CA

▲ **Procurement Office, Air Defense Wing,** 4750 Yuma Air Force Base, Yuma, Ariz., cancelled bids to have been opened Sept. 6, to construct and finance 320-family HOUSING units of armed services housing, Yuma Air Force Base, Inv. No. 02-606-57-7, YUMA ARIZ. Est. **$3,750,000**. CD 8/8.

▲† **Barry J. Richards Co.**, P. O. Box 1187, Studio City, Calif., CA **$1,576,485**, 45 frame RESIDENCES, 146 CARPORTS, CONFERENCE and ADMINISTRATION BLDGS., streets, utilities, etc. for Trinity River Proj., workers at Lewiston, Central Valley Proj., Spec. 4722, CALIFORNIA Bureau Reclamation, Dpt. Interior, Weaverville, Calif. Bids Aug. 14, awarded Sept. 11. CD 8/17, under LB.

# CANADA

## HEAVY CONSTRUCTION—LB & CA

▲† **Marine Industries Ltd.**, 1405 Peel St., Montreal, Que., CA **$4,897,146.** dredging Montreal Harbor, MONTREAL, QUE. National Harbors Bd., West Block, Parliament Bldgs., Ottawa, Ont. Awarded Aug. 26. CD 5/10, under LB.

## BUILDINGS—LB & CA

▲ **Canadian Bechtel Ltd.**, 540 Burrard St., Vancouver, B. C., CA **$4,000,000**. 5,000 b/d POWERFORMER, at refinery near VANCOUVER, B. C. Imperial Oil Ltd., 1090 Granville St., Vancouver, B. C. CD 11/29/51.

▲ **E. R. Tremblay Constr. Co. Ltd.**, 39 Goulburn Ave., Ottawa, Ont., CA, **$1,772,818**. (3 bidders) 176-single family DWELLINGS, Canadian Army Camp, PETAWAWA, ONT. Central Mortgage & Housing Corp., 40 Eglington Ave. E., Toronto, Ont. Bids Aug. 2, awarded Aug. 23. CD 7/19.

▲ **R. W. McKay Constr. Co.**, 400 N. Front St., Sarnia, Ont., CA, **$1,880,200**. (8 bidders) 2 story, bsmnt., 161x250 ft. FEDERAL BLDG., SARNIA, ONT. Dpt. P. Wks., Hunter Bldg., Ottawa, Ont. Bids Aug. 15. CD 8/22, under LB.

# FOREIGN

## BUILDINGS—BA

▲ **Greece, Ptolemais**—FERTILIZER PLANT—BA 1/14/57—Ministry of Co-ordination of Greek Govt., Athens, constr. nitrate fertilizer plant. $30,000,000. Plans available on loan from Trade Development Div., Bureau Foreign Commerce, Wash. 25, D. C., U. S. A. CD 7/12.

## BUILDINGS—LB & CA

▲ **United Austrian Steel Works**, Lintz, Austria and **Krupp Works**, Essen, Germany, CA Est. **$24,000,000**. STEEL WORKS in Rourkela, INDIA. Govt. of India, Delhi, India.

DUR-O-WAL

Backbone of Steel for EVERY Masonry Wall

TIED
WALL
RUNNING
BOND
CAVITY
WALL
BONDED
WALL

**BEAUTY**

Dur-O-waL steel reinforcing, buried within tight, trim mortar locks, assures years-ahead beauty for any masonry building you design.

**ECONOMY**

A few pennies invested in Dur-O-waL now can mean big savings later on . . . through prevention of costly cracks and elimination of ugly patchwork.

In masonry building specifications you write, the Dur-O-waL reinforcing section is of utmost importance. QUALITY materials serve to assure the finest of structural craftsmanship. It will be our pleasure to work with you on any reinforcing problem. For complete information on Dur-O-waL, write today to Dept. 7N.

**PERFORMANCE**

Customer . . . Builder . . . Achitect satisfaction from coast to coast. Dur-O-waL stands the test of time in America's finest masonry architecture.

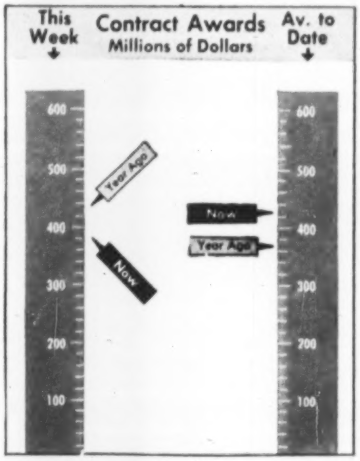
Trussed Design
Butt Weld • Deformed Rods

DUR-O-WAL®

Dur-O-wal Div., Cedar Rapids Block Co., CEDAR RAPIDS, IA. Dur-O-wal Prod., Inc., Box 628, SYRACUSE, N.Y. Dur-O-wal of Ill., 119 N. River St., AURORA, ILL. Dur-O-wal Prod. of Ala., Inc., Box 5446, BIRMINGHAM, ALA. Dur-O-wal Prod., Inc., 4500 E. Lombard St., BALTIMORE, MD. Dur-O-wal Div., Frontier Mfg. Co., Box 49, PHOENIX, ARIZ. Dur-O-wal, Inc., 165 Utah St., TOLEDO, OHIO

# Construction Scoreboard

## Activity this Week



### AMOUNT OF CONTRACTS LET

| By Ownership | This Week | Cum. 38 wks 1956 | Chge % |
|---|---|---|---|
| | $ millions | | |
| Federal | $32.3 | $1,277.9 | +2 |
| State and Municipal | 109.9 | 4,720.5 | +19 |
| Total Public | 142.2 | 5,998.4 | +15 |
| Total Private | 238.5 | 10,125.8 | +16 |
| U. S. Total | $380.7 | $16,024.2 | +16 |
| **By Type of Work** | | | |
| Waterworks | $6.3 | $258.8 | +29 |
| Sewerage | 11.8 | 437.7 | +47 |
| Bridges | 18.0 | 440.8 | +27 |
| Highways | 35.8 | 1,769.5 | +9 |
| Earthwork, Waterways | 16.2 | 564.7 | +49 |
| Buildings: | | | |
| Public, Excl. Housg. | 37.6 | 1,510.9 | +18 |
| Public Housing | 7.3 | 232.8 | +6 |
| Private Housing | 67.0 | 4,197.0 | −11 |
| Commercial | 18.9 | 1,296.8 | +3 |
| Industrial | 119.8 | 4,017.9 | +102 |
| Unclassified | 51.0 | 1,297.3 | −17 |
| U. S. Total | $380.7 | $16,024.2 | +16 |

NOTE: Minimum size projects included are: Waterworks and waterways, $44,000; other public works, $73,000; industrial buildings, $93,000; other buildings, $344,000.

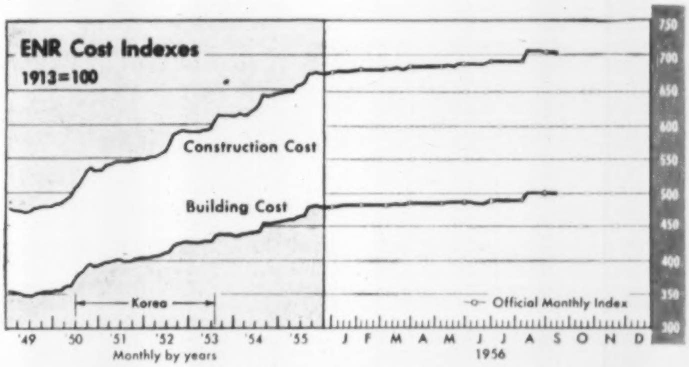
### NEW CAPITAL FOR CONSTRUCTION

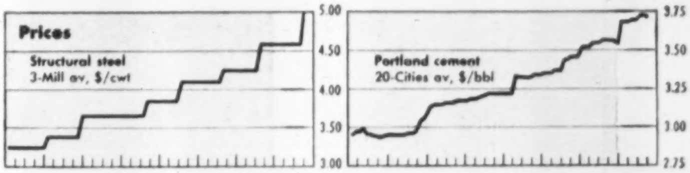
| | Week of Sept. 13 | Cum. 37 wks 1956 | Chge '55-'56 |
|---|---|---|---|
| | $ millions | | % |
| Corporate Securities | $53.0 | $3,479.4 | +45 |
| State and Municipal: | | | |
| All Except Housing | 53.1 | 3,194.2 | +9 |
| Housing | ... | 42.3 | −41 |
| Federal Loans | ... | 125.7 | +36 |
| Federal Aid | ... | 1,070.0 | +25 |
| Total Nonfederal | 106.1 | 7,911.6 | +25 |
| Federal Appropriations: | | | |
| In U. S. | ... | 3,460.3 | +2 |
| Outside U. S. | ... | 15.9 | −31 |
| Total New Capital | $106.1 | $11,337.8 | +16 |

## Cost Indexes as of Now

| ENR INDEXES (1913 = 100), 20-cities' average | Week of Sept. 13 1956 | % Change from Aug. 16 1956 | % Change from Sept. 15 1955 |
|---|---|---|---|
| Construction Cost | 704.08 | −0.2 | +4.6 |
| Building Cost | 499.54 | −0.3 | +4.2 |

To convert above indexes to 1926 = 100: Divide Construction Cost by 2.080; Building Cost by 1.850.
1949 = 100: Divide Construction Cost by 4.770; Building Cost by 3,518.





### ENR COST INDEXES IN 22 CITIES, 1913 = 100

| City | Construction Cost Sept. 1956 | Construction Cost Percent Change from last Month | Construction Cost Percent Change from last Year | Building Cost Sept. 1956 | Building Cost Percent Change from last Month | Building Cost Percent Change from last Year |
|---|---|---|---|---|---|---|
| Atlanta | 522 | +2.0 | +5.9 | 441 | +2.3 | +5.8 |
| Baltimore | 601 | +1.0 | +0.9 | 497 | +1.3 | +5.4 |
| Birmingham | 557 | +1.4 | +7.2 | 456 | +1.7 | +5.0 |
| Boston | 746 | +0.6 | +5.1 | 508 | +0.9 | +4.2 |
| Chicago | 792 | +1.0 | +5.3 | 507 | +1.6 | +4.0 |
| Cincinnati | 717 | +1.4 | +6.6 | 493 | +2.1 | +5.5 |
| Cleveland | 826 | +0.8 | +5.2 | 515 | +1.3 | +5.2 |
| Dallas | 534 | +1.9 | +5.5 | 446 | +2.7 | +5.7 |
| Denver | 680 | +1.5 | +3.7 | 503 | +2.0 | +3.7 |
| Detroit | 810 | +1.2 | +4.3 | 528 | +1.9 | +5.0 |
| Kansas City | 722 | +1.4 | +2.6 | 509 | +2.0 | +2.6 |
| Los Angeles | 736 | +0.9 | +4.3 | 497 | +2.1 | +2.8 |
| Minneapolis | 757 | +1.3 | +5.2 | 526 | +1.9 | +4.8 |
| New Orleans | 567 | +1.3 | +4.0 | 462 | +1.6 | +2.8 |
| New York | 847 | +1.0 | +6.7 | 573 | +1.5 | +4.6 |
| Philadelphia | 747 | +1.4 | +3.6 | 548 | +1.9 | +2.8 |
| Pittsburgh | 727 | +1.4 | +5.3 | 529 | +1.9 | +6.3 |
| St. Louis | 761 | +1.0 | +4.5 | 527 | +1.5 | +4.9 |
| San Francisco | 727 | +1.5 | +5.3 | 483 | +2.3 | +3.0 |
| Seattle | 724 | +1.1 | +4.4 | 452 | +1.8 | +3.6 |
| **U. S.—20 Cities' avg** | **705** | **+1.2** | **+4.8** | **500** | **+1.8** | **+4.4** |
| Montreal | 560 | 0 | +5.3 | 437 | 0 | +6.0 |
| Toronto | 592 | +2.9 | +9.9 | 465 | +3.7 | +6.9 |

New England's Largest Wrecking Firm,
John J. Duane Company, at work.

**WHOLE FLOOR OF BUILDING** has been pulled loose by this crane of John J. Duane Company. To do it, workmen drove two holes in the floor (walls and roof had already been removed) and inserted cable down through holes and up to crane. Crane then tugged until floor ripped loose. This is typical of workout the firm's cranes receive, but using Cities Service lubricants they give flawless performance.

# Razes buildings, raises efficiency using Cities Service lubricants

**9000 hours on a crane and no trouble . . . truck goes 65,000 miles, uses no make-up oil!**

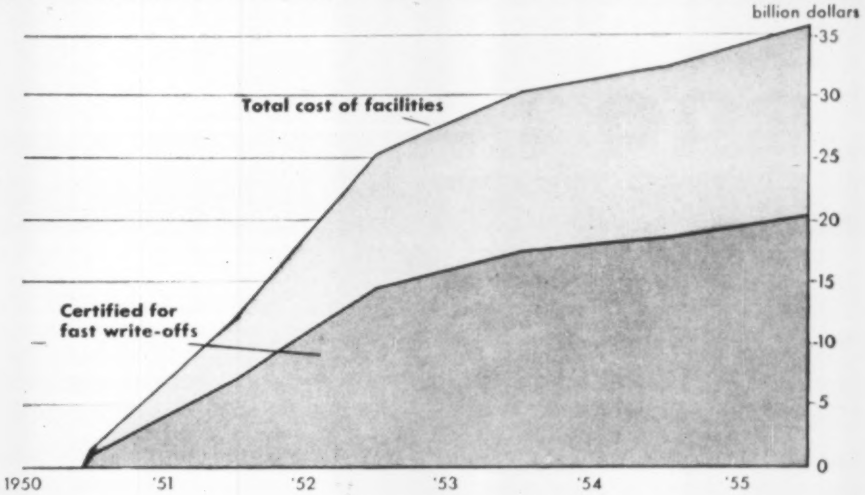
JOHN J. DUANE COMPANY, Quincy, Massachusetts, operates 10 cranes, 14 gasolene and diesel trucks, three forklifts, and a bulldozer . . . all powered and lubricated by Cities Service. The results are notable. Says John Duane: "Using Cities Service C-300 Motor Oil, one of our diesel cranes has gone 9000 hours with absolutely no trouble, and the oil has doubled the period between overhaul for our truck fleet. Furthermore, one gasolene truck has gone 65,000 miles without adding a drop of C-300 between crankcase drains. We're also mighty pleased with Trojan P-2 Grease. Used on the tracks of our cranes, Trojan P-2 keeps them operating flawlessly under the most severe conditions."

Like Mr. Duane, you'll lengthen overhaul periods, cut operating costs when you start using Cities Service products. Get all the facts from a Cities Service Lubrication Engineer. Or write: Cities Service Oil Company, Sixty Wall Tower, New York 5, N. Y.

**CITIES SERVICE**

QUALITY PETROLEUM PRODUCTS

**Government has boosted construction of defense-related facilities totalling $36-billion through fast tax write-off certificates**



## THE LONGER LOOK:

# Tax Aid—Key to Future Steel Prices

The fuss over tax write-offs, currently engaging the attention of government policy-makers and the steel industry, could have a triple impact on construction. Contracts for mammoth new steel facilities are involved. Proposed new capacity may help ease steel shortages. And the entire construction industry will feel the effect on steel prices.

According to steel executives, extension of the tax concessions adopted during the Korean emergency is essential if their expansion plans are to be carried out without stiff price increases.

When U. S. Steel raised prices by a smaller percentage than the rise in wage costs last month, the move was interpreted as an action of restraint, motivated in part by the hope of winning approval of fast amortization proposals.

At stake in the government's consideration of the steel industry's pleas are steel facilities with an estimated total cost of over $850 million. This is a hefty chunk of the steel industry's plans to add some 15,000,000 tons of capacity over the next three years, with an expected annual outlay of over $1 billion.

Other industries using expensive capital equipment, with problems of financing expansion programs, also are pressuring government officials to open up the gates for more fast write-offs. Railroads, with mounting needs for modernized terminal facilities and rolling stock, are among those keenly interested.

Depreciation allowances have become the most important single sources of funds to pay for industry's expansion and modernization programs. They are currently yielding over $15 billion annually, and the figure is rising rapidly. The more industry can rely on depreciation, the less it has to dip into earnings or seek outside financing.

Depreciation money has the additional appeal of being tax-deductible and of being protected against stockholders' pressure of more dividends. The allowance taken annually to represent loss through wear-and-tear and obsolescence is a cost, subtracted from gross income. Higher depreciation charges mean lower taxable income and also lower net income as reported to stockholders—hence, less available for dividends. But the money is just as good as earnings retained in the business.

The fast amortization offered industry during the Korean emergency does not provide any actual increase in the total depreciation industry can charge on a machine or building. It merely enables the favored corporation to charge off most of the total in five years. This returns the money quicker for possible use in further capital spending. And it also means that the big deductions come during a period of high income and high tax rates.

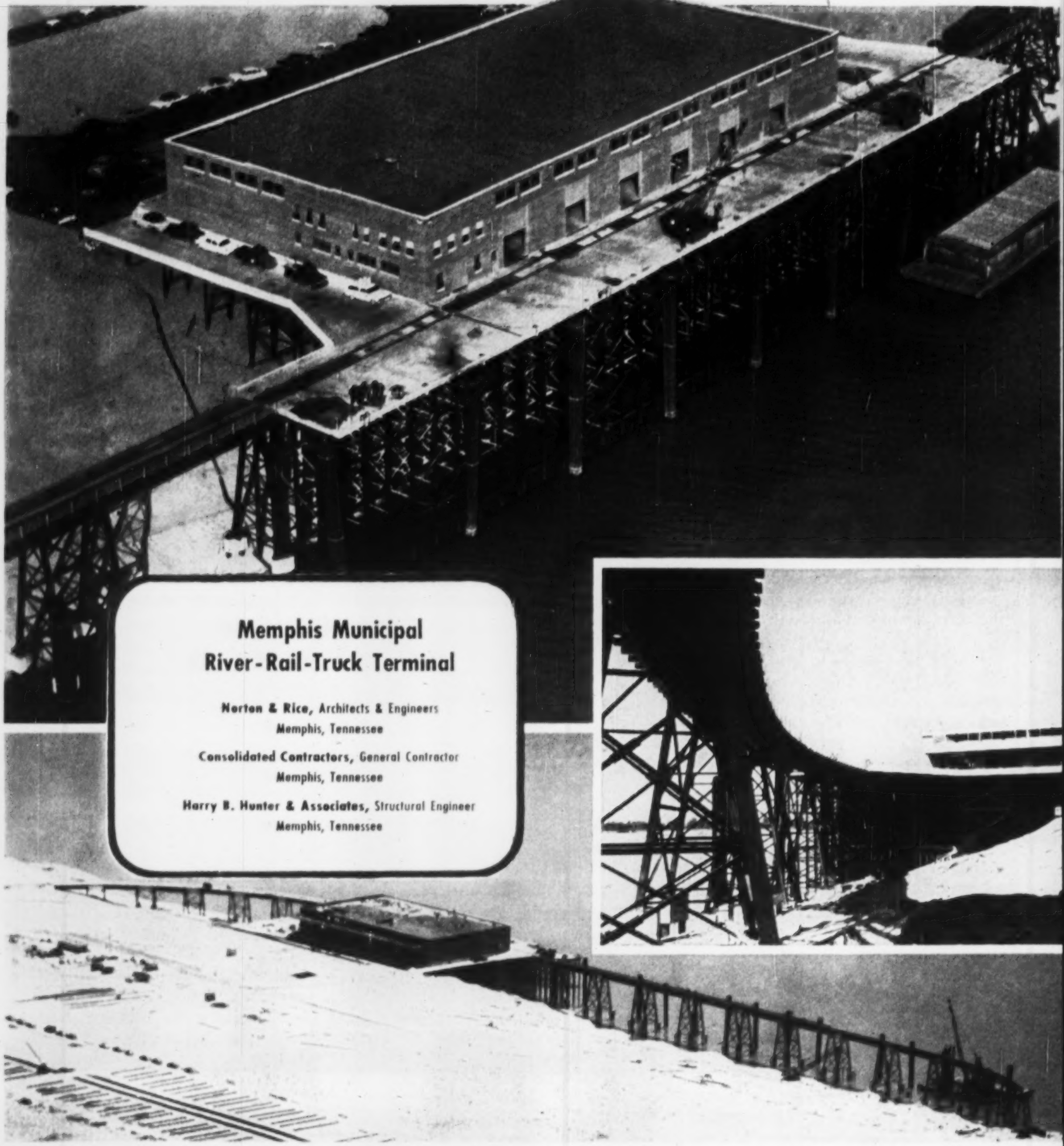
The government authorized fast write-offs to induce industry to build defense and defense-related facilities badly needed for full mobilization that were of dubious value for non-defense production.

As most of the certified facilities—such as pipelines and power plants and factories—have both defense and non-defense value, only the proportion deemed defense-related is given the five-year privilege. The rest must be

*(Continued on page 110)*

# New Three-Way securely and

# 1,200 TONS OF USS



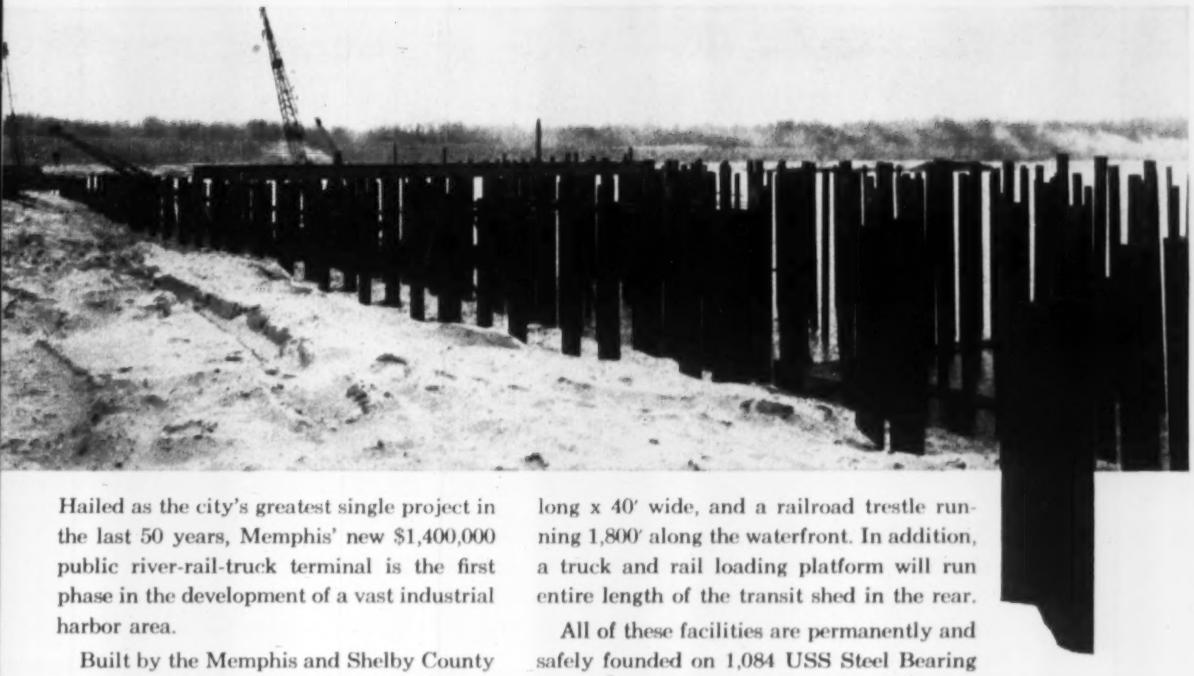
**Memphis Municipal River-Rail-Truck Terminal**

**Norton & Rice,** Architects & Engineers
Memphis, Tennessee

**Consolidated Contractors,** General Contractor
Memphis, Tennessee

**Harry B. Hunter & Associates,** Structural Engineer
Memphis, Tennessee

# Terminal at Memphis permanently built on *Steel* BEARING PILES



Hailed as the city's greatest single project in the last 50 years, Memphis' new $1,400,000 public river-rail-truck terminal is the first phase in the development of a vast industrial harbor area.

Built by the Memphis and Shelby County Port Commission, this modern terminal consists of a large transit shed containing 28,800 square feet of floor space, a paved dock, 400′ long x 40′ wide, and a railroad trestle running 1,800′ along the waterfront. In addition, a truck and rail loading platform will run entire length of the transit shed in the rear.

All of these facilities are permanently and safely founded on 1,084 USS Steel Bearing Piles varying in height from 35′ to 75′, some of which were driven to a depth of 38′.

## *Proved Structurally and Economically Sound*

**USS STEEL BEARING PILES** have been proved structurally and economically sound in a wide variety of projects. On large jobs and small. In fresh water and in salt water. Under buildings, bridges, piers, docks, dams and viaducts. They can support unusually heavy loads per pile . . . and resist high bending stresses. They effectively resist lateral displacements . . . penetrate with remarkable ease through all types of unstable sub-soil materials, to provide a secure means of supporting foundations at great depth.

Their great capacity for high unit loads, both vertical and horizontal, means fewer piles and fewer driving operations for a given load. USS Steel Bearing Piles are readily handled in the field with ordinary equipment, and are easy to splice, eliminate jetting, and withstand rough handling.

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TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA. • UNITED STATES STEEL SUPPLY DIVISION, WAREHOUSE DISTRIBUTORS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

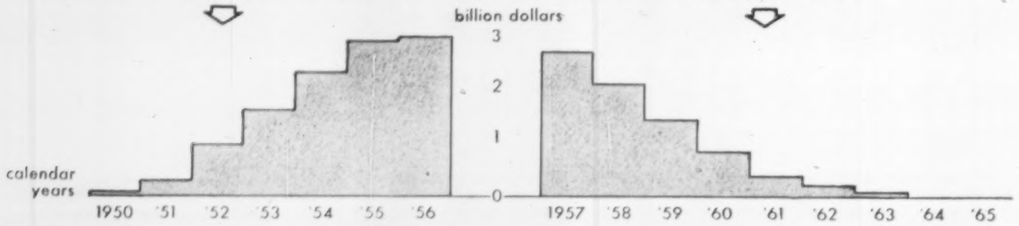
**USS Steel H-Bearing Piles**

USS

**UNITED STATES STEEL**

**Fast amortization has provided industry an increasing stream of money...**

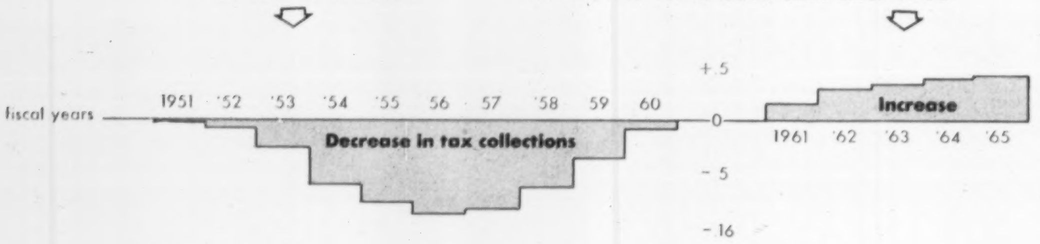
**...but starting next year these allowances will be declining sharply**



**...And Treasury officials oppose extension of Korean emergency program because...**

**...this loss in revenue**

**...will not come back until after 1960**



Source O.D.M. and U.S. Treasury

depreciated according to a regular depreciation method.

The effect of the Korean program is shown in the charts. Facilities with an estimated total cost of over $36 billion have been certified, an average of about 60% being accorded fast write-off privileges.

Industry's annual allowances from the certificates have risen until this year, when the total will be about $3 billion. Most of the certificates were granted during 1951 and 1952, and the Office of Defense Mobilization, which administers the program, last year closed most of the areas where it had promoted expansion.

There are two main reasons for the slow-down in the fast tax write-offs program:

- Most of the expansion goals the program was designed to achieve have been filled.

Government officials, principally Treasury Secretary George Humphrey, argue that continuance of the special incentives would only discriminate against industries that are not eligible. Humphrey has declared that, except in emergency situations, "expansion of our defense facilities should be an integral part of our broad, orderly, long-range, natural economic growth."

- What is a tax-saving or tax-postponement to industry, is a tax-loss or revenue-postponement to the government.

Deductions from emergency amortization are currently costing the Treasury more than $800 million a year.

The fact that industry is taking these deductions now means that lower deductions will have to be taken later on and that tax liabilities will rise—but not until after 1960.

**Meantime, industry is getting the equivalent of an interest-free loan from the U. S. Treasury.**

The steel industry's problem is an imminent squeeze. Costs of new facilities are rising relentlessly. At the same time, it faces a decline in funds available annually from fast write-offs. The alternatives are, essentially, getting outside money or raising earnings by charging higher prices—unless the industry can bank on more fast write-off certificates.

Charles M. White, chairman of Republic Steel, contends that the steel industry is nearing the end of a "rounding-out process for gaining new tonnage at a cheap figure" by adding on to existing facilities.

Republic's recent round of expansion cost only $85 a ton. The next round will run around $200 a ton. Then Republic will have to build "from scratch" on the following round, at $325 a ton of capacity.

Fast write-offs are being asked now as a means of increasing the industry's available resources from depreciation allowances. They also would aid in a company's argument for getting bank loans to build new facilities, since they provide the money for fast repayment of loans.

The steel industry has another complaint about present depreciation policies. But on this one it is less likely to win favorable government action. **This is the problem of replacement cost vs. initial cost.** Benjamin Fairless, former chairman of U. S. Steel, has taken the lead in presenting the industry's case.

"The purpose of depreciation," Fairless says, "is to recover over the lives of facilities the dollars originally invested in them. The dollars when recovered are presumed to be sufficient to buy enough equipment to keep even with the wearing out of existing equipment." Using ENR's Construction Cost Index, he points out that costs are rising about 7% a year. Sums set aside over 25 years to pay for a steel mill fall far short of the amount necessary to replace the facilities.

The position of the government and of most accountants, however, is that depreciation is not supposed to provide money for replacement; it's sup

(*Continued on page 112*)

Machine finish failures are expensive . . .

***"We spend a lot of money on paint—why do I have to keep apologizing for the appearance of our equipment?"***

If you are an original equipment manufacturer and are using an expensive paint with the above results, then something is wrong—either in the paint or in the method of application.

We at Tousey are specialists in the field of weather resistant finishes and are capable of making a thorough survey of the finish you use and the problems to which it will be subjected.

This study will be made with the objective in mind of whether or not: 1) a new finish should be used; 2) a new method of application should be followed; 3) or both.

Cost savings are not always possible at the outset—but we know that a sound and progressive painting program will result in future economies.

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PRODUCTS
DURACOTE for DURABILITY

*A letter or phone call to Mr. Bradford Alcorn, V. P. at TOUSEY Varnish Co., 520 West 25th Street, Chicago 16, VIctory 2-2201, will bring you prompt action—and may be the first step in the modernization of your finishes.*

**TOUSEY VARNISH COMPANY**

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EVERY KIND IN STOCK
IMMEDIATE SHIPMENT

REINFORCING BARS and accessories
STRUCTURALS—channels, angles, beams, etc.
PLATES—many types including Inland 4-Way Safety Plate
SHEETS—many types & coatings
TUBING—incl. welded structural
WIRE MESH—all standard sizes
EXPANDED METAL—std. & flattened
STEEL SPIRALS, CAISSON RINGS, ETC.

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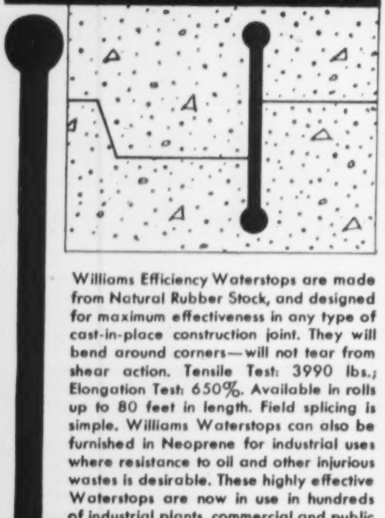
RUBBER
WATERSTOPS
FOR MASONRY CONSTRUCTION JOINTS



Williams Efficiency Waterstops are made from Natural Rubber Stock, and designed for maximum effectiveness in any type of cast-in-place construction joint. They will bend around corners—will not tear from shear action. Tensile Test: 3990 lbs.; Elongation Test: 650%. Available in rolls up to 80 feet in length. Field splicing is simple. Williams Waterstops can also be furnished in Neoprene for industrial uses where resistance to oil and other injurious wastes is desirable. These highly effective Waterstops are now in use in hundreds of industrial plants, commercial and public buildings throughout the country.

*See Sweet's, or Write for Information.*

WILLIAMS
EQUIPMENT and SUPPLY CO.
16651 Baylis Ave., Detroit 21, Mich.

posed to recover original cost. If the government permitted industry to make allowances for inflation in its depreciation charges, then equity would seem to demand that people holding government bonds or savings accounts should receive some consideration, too.

If industry sold bonds to pay for new facilities and then used the depreciation allowances to redeem the bonds, the original cost would be recovered entirely and inflation would present no problem. When replacement time came, it would merely issue new bonds.

But when industry finances construction out of its own reserves, the matter becomes confused. Depreciation is regarded not so much as a way of paying for what already is built as a way of financing the next project. This is at the heart of the steel industry's complaint.

## Six Month Outlook

### Contractors see tighter competition; more work; bid prices due to go up

Contractors expect to get more business in the next six months, but they also expect even keener competition for the new business, according to a survey of 124 chapters of the Associated General Contractors.

Bid prices will tend to rise, the contractors feel, because of higher materials prices and higher wage rates.

As a group roadbuilders were the most optimistic about getting more business in the next six months. This is due to the expanded federal-aid highway program.

Of the highway contractors queried, 87.5% expected to sign up more new business in the next six months than in the past six months. Nearly 11% expected no change in the amount of work they would be handling and 1.7% forecast a decrease.

In the heavy construction field, nearly 60% of the contractors forecast a larger volume of work. Slightly more than a third see no change, and a little more than 6% expect to get less new business than they have been getting in the past.

Building contractors seemed less confident about business prospects than builders in the other categories.

Of the building contractors reporting, 53.1% expect to increase their volume of work, 29.7% see no change, an 17.2% think they will get less new business in the next six months.

Competition for the new business will be keener, according to 42.6% of the firms. Another 50.7% said competition will remain on its present level. Less than 7% thought that competition would ease up.

Commenting on the contractors' estimates of the competitive situation, AGC said:

"The slight majority of replies indicating no change reflects a widespread feeling among contractors that competition is now so keen that it could hardly become more so."

Despite the outlook for tougher competition, nearly half of the contractors expect bid prices to go up, while nearly 39% see no change.

Tied in closely with this is the feeling that materials prices are due to rise again in the next six months. On this question, 87.1% of the contractors predicted increased materials prices, while 12.9% feel prices will stay at present levels. Significantly, none of the contractors feel that prices will come down.

Contractors also reported numerous job delays because of widespread shortages and slow deliveries of many materials. Steel and cement shortages were reported to have caused the greatest effect.

To no one's surprise, contractors in 41 states reported shortages of structural steel. In 20 states, steel pipe is short. Reinforcing steel is on the shortage list in 19 states and wire mesh in 16.

Eleven states have cement shortages, according to the contractor survey.

Structural clay products are considered short in 11 states; brick is short in eight; and concrete aggregates in two.

## Housing Starts Drag

### Modest August gain in private work is offset by drop in public units

Housing continued to drag its heels in August.

Private housing starts were up a modest 1.4% over July, but a drop in public housing starts cancelled this out. The combined private-public total for the month was 101,000 units. This matched the total for July but was down 19% from August 1955.

Total private housing starts for August were 100,500, according to the Bureau of Labor Statistics. This was 18% below the August 1955 rate.

On a seasonally-adjusted annual basis, private starts last month were equivalent to 1,110,000 starts per year, slightly better than the June-July rate of 1,070,000.

The 500 public housing units reported for August represented the lowest for any month since January 1955.

BLS has substantially revised its estimates for the earlier part of this year and now figures the eight-month total of public housing starts at 15,700, up 14% over the comparable period last year and 3% ahead of the same period in 1954.

However, 1954 and 1955 totals reflected big cuts in public housing.

For the year to date, total housing starts—both public and private—are estimated at 782,000—17% under the 943,000 reported for the first eight months of 1955.

## Alcoa Expands

### $11-million addition will put firm's primary capacity near 1,000,000 mark

The Aluminum Company of America will start construction within a few days on an $11-million smelter addition at its Point Comfort, Texas, plant.

The addition will add 20,000 tons to Point Comfort's present installed capacity when it goes on the line in January 1958.

The addition, along with 150,000 tons of new production due about the same time from the company's Warrick, Ind., works, will put Alcoa's installed capacity close to the 1,000,000 tons per year mark.

The enlarged Point Comfort smelter will be operated adjacent to a new alumina plant now under construction at the site. This new alumina plant will supply Alcoa's smelters at Point Comfort and Rockdale, Texas.

Essential to the alumina operation is construction of a deep-water channel through Matagorda Bay, connecting the plant site with the Gulf of Mexico.

Completion of earlier expansion programs this year at Point Comfort and Rockdale resulted in an increase of 75,000 tons in their combined capacities, equivalent to about 4% of the 1955 U. S. aluminum production.

The latest expansion moves are part of a broad program that could involve construction outlays of $600 million in the next five years.

## Equipment Prices Move Up; Makers Blame Steel Hike

Thew Shovel, International Harvester and Allis-Chalmers are putting higher price tags on their construction equipment. Other manufacturers are expected to follow suit.

International Harvester hiked its truck prices from 5% to 6%, and other I-H construction equipment prices will go up from 1.7% to 6%, effective today.

Thew Shovel posted new prices that are from 3% to 7% higher on its complete line of construction equipment. Allis-Chalmers announced similar increases on Monday.

The equipment manufacturers placed most of the blame for the new price increases on substantially higher steel prices.

## Bridge Bonds Slated to Go To Market for Second Time

Washington State Toll Bridge Authority will open bids Sept. 25 for a $5.4-million bond issue to finance construction of a second bridge across the Port Washington narrows at Bremerton.

This is the second time the authority has tried to sell the bonds. It rejected a lone bid received Aug. 21 because it felt the interest rate was too high.

In another action, the authority voted to submit to W. C. Gilman, Chicago consulting engineering firm, a plan to modernize state ferry terminals located at Vahon, Fauntleroy and Harper.

The Gilman firm will determine whether the projects can be financed by a revenue bond issue.

And, the authority also accepted a recommendation that a financial consultant be named in order to determine the feasibility of a proposed toll bridge across the Columbia River at Biggs Rapids.

## Business Briefs . . .

• **Truck competition** — Studebaker-Packard Corp., well established in the light and medium truck field, will enter the heavy truck field this fall. It's a move to cash in on growing demand for heavy trucks generated by the stepped-up heavy construction and roadbuilding programs.

• **Overseas subsidiary**—Thew Shovel Co., producer of Lorain power shovels and cranes, has set up a wholly-owned Dutch subsidiary to manufacture and distribute the Lorain Machines in Europe.

• **Dallas permits down**—Tight money is taking its toll in Dallas, Texas. August building permits dropped to the lowest level in 32 months.

**Plant Trenches**

***NEED CLEAN, DRY COVERS***

TRENCHES in floors of industrial plants often house subsurface pipes, valves, etc. Often these trenches are covered with cast iron plates or wooden boards which collect grease, oil or water, making unsafe floor areas.

Trench covers of 75% open Irving metal grating remain safe because they will not collect these substances. In addition to providing drainage and traction, grating sections can be easily removed for access to trenches.

★

Manufacturers of Riveted, Pressure-Locked and Welded Gratings in Steel, Aluminum and other metals for over 50 years.

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## Labor

# AFL-CIO Endorses Stevenson

### Carpenters protest endorsement as labor weighs needs of average citizen against the demands of "big business"

The AFL-CIO last week in Chicago formally endorsed the Democratic national ticket by giving its support to Adlai Stevenson and Estes Kefauver.

In doing so, the federation took a look at what now appears to be one of the basic issues, labor-wise, in the current political campaigns: Is the present Administration a government of special interests or is it a government of the people serving the needs of average Americans?

The Stevenson endorsement was given with only a handful of opposition at a meeting of the AFL-CIO's General Board, composed of a representative of each of the federation's 145 unions plus the members of the Executive Council.

Prior to the endorsement, the AFL-CIO's Committee on Political Education distributed to board members an analysis of the platforms and Presidential candidates of the Republican and Democratic parties. Noting that the Administration has helped "big business," while proving "ineffectual in providing action to meet the needs of the average citizen," the report said: "Stevenson places human values first. He is devoted to the free enterprise system. But he does not believe the demands of big business should be given prior consideration over the needs of the people as a whole."

President Eisenhower's "good intentions" were conceded, but his "failure" to carry them out was noted. And turning to Vice President Nixon, one board member asserted that Nixon's record as a senator was "the most reactionary" of any.

In the face of Walter Reuther's plea for unanimity on the endorsement, the carpenters union again spoke out against such action. Said Vice President John Stevenson: "Our members, who are required to be citizens, will cast their ballots the way they want without the urging of our union and we will not sit here and vote to endorse any candidate."

**• No dictation**—AFL-CIO President George Meany, however, repeatedly has said that his organization does not presume to dictate the voting of its members. "No one," he once remarked, "can tell the American worker how he has got to vote." Technically, the endorsement is part of the ambitious AFL-CIO educational effort to obtain a political climate favorable to legislation that promotes the welfare of working people, which the AFL-CIO, with its economic theory of a consumer-based prosperity, says "is not divisible from the welfare of the nation." That effort has as its approach the endorsement of political candidates "regardless of party affiliation" who appear to understand and to be sympathetic to the "hopes and needs" of American workers (ENR Sept. 13, p. 21).

Thinking along these lines on the eve of the endorsement, Adlai Stevenson had this to say: "American needs today . . . the restoration of government which recognizes the existence of people . . . not as statistics in a market survey, but as individual men and women. . . ."

**• Mission**—With the endorsement behind it, the AFL-CIO now is embarked on its "mission for progressive government." Here's the way one California labor leader sizes up the situation: "Labor's role in a Presidential election year is inevitably a critical one . . . labor must by united action both protect its collective bargaining rights and make certain that government will place the security of the people above the special corporate interests which wield immediate and powerful influence in American political life. This means we must . . . reward our friends and oppose our enemies at every level of elective office. . . . In this struggle we will campaign not for ourselves in any narrow, institutional sense, but rather for the common people of America, for all who lack voice and vote in the councils of wealth."

In the meantime, industry itself was split over labor's political activity. The National Association of Manufacturers is urging more political action on the part of management, claiming that if labor achieved its political goals there would be an "end to truly representative government in the United States." "Claptrap," said an industrialist who last week addressed the convention of the International Association of Machinists, AFL-CIO—"Greater participation in political affairs by organized labor should be encouraged.

# Labor Looks at Shorter Working Hours

The trend toward a shorter workweek may well be slow and spotty because most workers are inclined to think in terms of higher incomes with which to improve their standards of living.

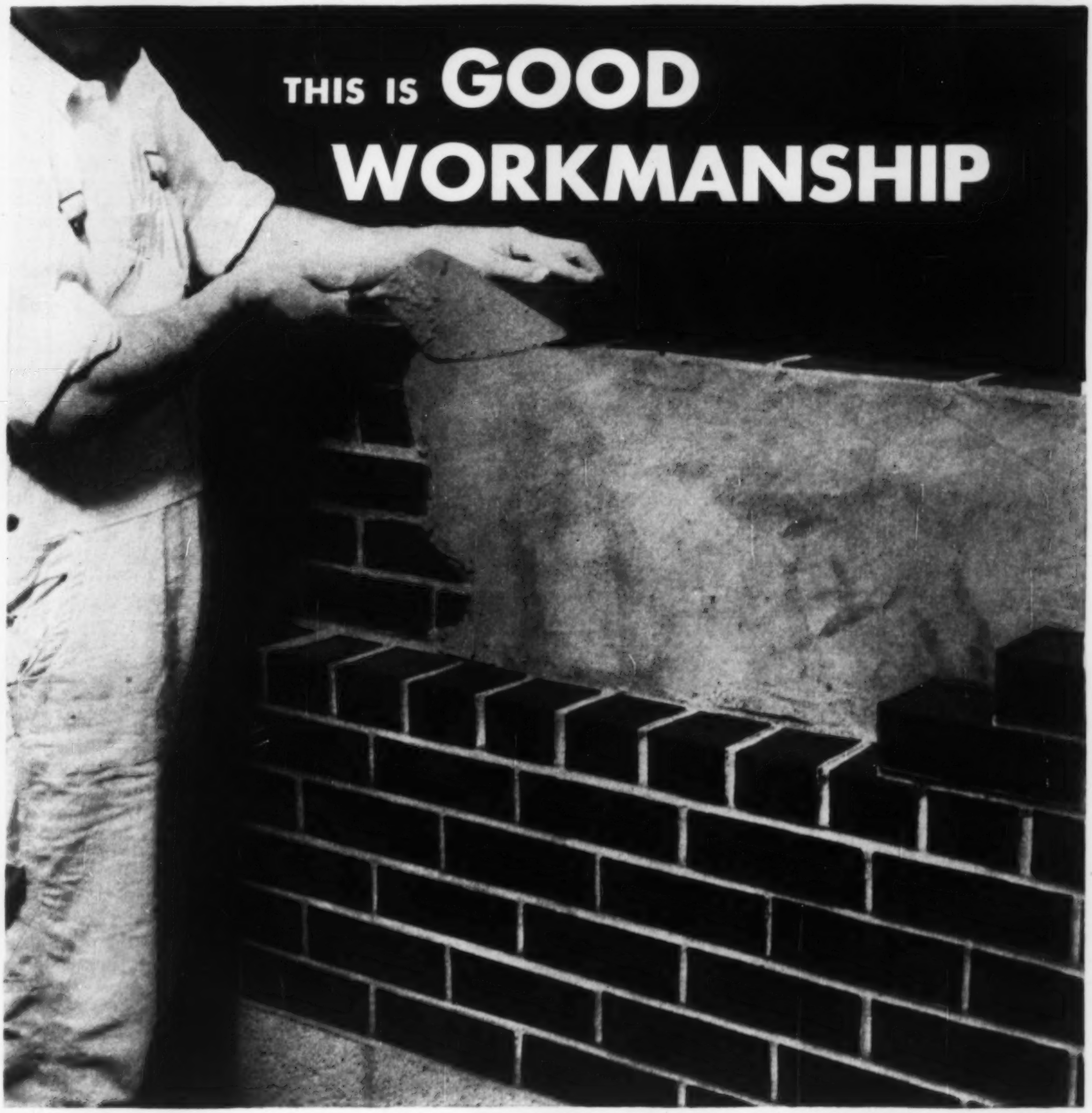
These were among the views expressed last week at a special AFL-CIO conference on working hours. Convened in Washington, D. C., for "informational purposes" only, the meeting gave union leaders and economists a chance to sound out current thinking on the problem. No policies were established, no decisions made, because hours of work are considered within the realm of collective bargaining by individual unions.

It was pointed out during the discussion that the early drives for shorter hours had been spearheaded by the craft unions and that the carpenters, under the guidance of Peter J. McGuire, were largely responsible for achieving the eight-hour day. Now, according to a 1955 U.S. Labor Department survey, the average workweek of building tradesmen is 39.4 hours, with the following percentages of construction union members on the workweeks indicated: 40 hours—87.79%; 35 hours—11.5%; 30 hours—.5%.

In the past, job security has been—and it's apt to remain—the biggest single factor behind union interest in shorter working hours. The theory is a realistic one. By cutting down the workweek, work can be spread around as a means of minimizing the possibility of unemployment for the individual. In this respect, the shorter workweek holds some promise for the future if technological progress threatens dislocations in employment. For this reason, AFL-CIO President George Meany, ever conscious of the relationship between the nation's ability to produce and its ability to consume, told the conference that the progress of automation may force greater union emphasis on a shorter workweek.

But beyond this, according to some economists, the average worker doesn't seem to be much interested in more time off except for his paid holidays

*(Continued on page 116)*



GOOD workmanship is one of the most important factors in preventing leaky brick walls.

Good workmanship includes wetting the brick—completely filling the head and bed joints—and back-plastering the face brick before the back-up units are laid.

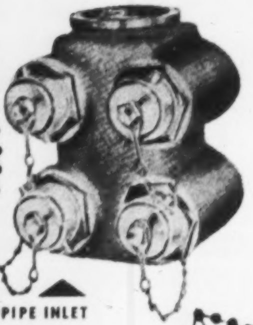
**Expect trouble when the face brick are not parged. Even if the space between the face brick and the back-up units is slushed, it cannot be completely filled with mortar. Voids are left between the mortar and the brick, through which water may enter, trickle down and leak to the inside of the wall.**

Brixment mortar enables the bricklayer to back-plaster quickly and easily. Brixment mortar has great plasticity, high water-retaining capacity and bonding quality, great resistance to freezing and thawing, and freedom from efflorescence. Because of this *combination* of advantages, Brixment is the leading masonry cement on the market.

# BRIXMENT

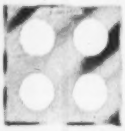
**LOUISVILLE CEMENT COMPANY, Incorporated, LOUISVILLE, KENTUCKY**

When the job calls for
**STANDPIPE CONNECTIONS**
Specify
**GREENBERG!**



4-way STANDPIPE INLET CONNECTION (exposed or concealed)

Greenberg's manufactures a complete line of standpipe connections and other fire protection equipment (fire hydrants, hose valves) to "underwriters" standards.



WALL PLATE for 4-way SQUARE STANDPIPE INLET (when connection is concealed)

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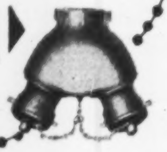
Completely engineered — to save you time and work. Write for your copy today (please use company stationery)



2-way SIAMESE STANDPIPE INLET CONNECTION

BRONZE PRODUCTS by GREENBERG

M. GREENBERG'S SONS
765 FOLSOM STREET
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**MAYO**
**PNEUMATIC GROUTER**
and
**"PEA SHOOTER"**
Simple to Operate
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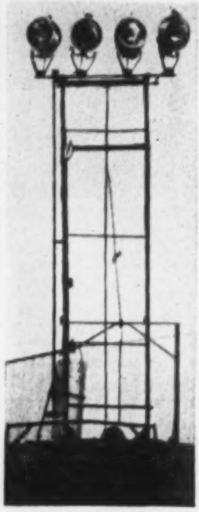
The Mayo Grouter quickly and easily places low-pressure grout in tunnels, mines, shafts, foundations, and subgrades. It also may be used to inject sodium silicate emulsions for stabilizing caving or running ground.

This versatile piece of equipment can readily be converted to a "Pea Shooter" for shooting Pea or "Bird's Eye" gravel back of liner plates and backpacking outside lagging plates.

*Write for Free Catalog 13 for full details and specifications.*

MAYO
TUNNEL AND MINE EQUIPMENT
LANCASTER, PENNA.

TOWER MOUNTED PROPANE FLOODLIGHTS



Skid-mounted, 18-ft. steel pipe frame tower weighs 600 lb.

Light volume adjustable up to 6,000 c.p. per light. Boom elevation adjusted by winch.

Assembly of four lights operates 12 hours at full capacity on 20-lb cylinder of fuel, at fuel cost of 15 cents an hour.

Light instantly with match even in 40° temperature. Safe, totally weatherized.

Also available: 4 to 8-ft. telescopic stands for individual lights.

*Dealer inquiries invited*

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**WM. W. LEE and SON**
20 EAST JACKSON BLVD.
CHICAGO 4, ILLINOIS

and paid vacations. In the face of a strong urge to improve himself economically, his yen for extra leisure isn't too strong.

Two examples were cited. After the eight-hour day became federal law, worker-interest switched to the chance the law afforded to increase income through overtime pay. And when the rubber workers went onto a six-hour day, many employees used the extra time to get part-time jobs.

Thus some of the theoretical advantages of a shorter workweek—such as that of sharing the fruits of increased productivity, or of bolstering the national economy by maintaining or broadening consumer purchasing power, or by affording leisure time for self-improvement—aren't apt to influence union thinking too much.

And the interest in job security, coupled with the cost of a shorter workweek in terms of hourly wages, will undoubtedly tend, according to one economist, to make the trend toward shorter hours a gradual one.

A number of forms a shorter workweek might take were suggested. A reduced workday, a reduced workweek, longer weekends and more extensive paid vacations were among those mentioned.

## Growth of the Union Shop Is Noted by State Agency

Greater use of the union shop agreement in Connecticut is cited by the State Board of Mediation and Arbitration in its annual report as evidence of a growing confidence between labor and management.

Noting that management no longer has the firm opposition it once had to the union shop, the board said: "We see the reflection of a more favorable judgment by management on union stability and responsibility. We see a common recognition of constructive intentions and mutual respect. This is truly a hopeful sign of progress for labor-management relations in Connecticut."

Elsewhere in its report, the board noted two significant collective bargaining trends within the state: a tendency toward long-term contracts and emphasis on fringe benefits. Contracts running for two or three years, it noted, are replacing the one-year contracts that used to prevail. And, as on the national level, there has been greater union emphasis on such fringe benefits as pensions and vacations. According to the board, the cost of fringe benefits in Connecticut industry now amounts to about 20% of the payroll.

## AFL-CIO Labor Groups Complete Merger in Utah

The Utah State Federation of Labor and the Utah Council of Industrial Organizations have completed their AFL-CIO merger on the state level. David S. Turner, former USFL secretary, was elected president of the new federation.

Action approving the merger agreement was taken several weeks ago by the state CIO, and the AFL followed suit on Aug. 22 with few dissents.

In greeting the new organization, Peter Gavin, assistant to AFL-CIO President George Meany, predicted that 90% of the states will have merged their AFL and CIO organizations by the end of the year.

Unless the AFL-CIO constitution is amended, mergers on the state and local levels must be completed by Dec. 7, 1957.

## Prevailing Rates Increased On New Mexico Public Works

Effective Oct. 1 minimum wage rates for construction workers on public works projects in New Mexico will be raised approximately 10%.

Announcement of the increase was made by State Labor Commissioner C. W. Burrell. Under the law, the rates represent the minimum contractors can pay on projects financed with public funds. Increases were determined earlier for work on interstate highway projects.

The new determinations will move the minimum rate for carpenters from $2.75 to $2.95; of laborers, from $1.65 to $1.90; of plumbers, from $2.87½ to $3.22½; of bricklayers, from $3.50 to $3.72.

## Failure To Pay Dues Caused A Loss of Jobless Benefits

A union member who lost his job because he failed to pay his union dues is considered, under Connecticut law, to be unemployed because of his own fault and ineligible for immediate unemployment benefits.

In ruling against the eligibility of a truck driver who belonged to the teamsters union, the Connecticut Unemployment Compensation Commissioner said that non-payment of union dues indicated that the driver "did not desire to maintain a condition necessary to his continued employment and constructively left his job".

The union shop agreement under which the driver was working required employees to be union members in good standing as a condition of employment.

## OFFICIAL PROPOSALS

Bids: October 30, 1956

### Contracts PW-2171, 2172, and 2173

WEST McNICHOLS RELIEF SEWER
SECTIONS I, II, AND III
DEPARTMENT OF PUBLIC WORKS
CITY OF DETROIT, MICHIGAN

Sealed proposals for a sewer, located in West McNichols Road extending from Hubbell Avenue to Bramell Avenue will be received at the Office of the City Engineer, 528 City-County Building, Detroit 26, Michigan, until 2:00 P.M., Detroit Time, October 30, 1956, and then at such place and time publicly opened and read aloud. The work is separated into three Contracts, namely PW-2171, PW-2172, and PW-2173. Bidders may bid on each Contract separately or may submit a bid on any combination of two or on all three Contracts. All three sections are to be constructed simultaneously, regardless of the method of combining contracts.

In Contract PW-2171 the work included consists of approximately 1.15 miles of 15'-0" inside diameter sewer to be constructed in tunnel under West McNichols Road between Bramell Avenue and just east of Fielding Avenue.

In Contract PW-2172 the work included consists of approximately 1.23 miles of 15'-0" inside diameter sewer to be constructed in tunnel under West McNichols Road between a point just east of Fielding and a point near the center of Southfield Road.

In Contract PW-2173 the work included consists of approximately 1.50 miles of 11'-3" inside diameter sewer to be constructed in tunnel under West McNichols Road between Southfield Road and Hubbell Avenue.

The Bidding Documents may be examined at the Office of the City Engineer during business hours, and copies may be obtained upon deposit of 25.00 per set, which deposit will be refunded upon the return of the Bidding Documents in good condition within 10 days after the date for opening of bids.

Each proposal must be accompanied by a certified check, bank draft, or a satisfactory surety bid bond in an amount not less than 5 percent of the total bid price as guarantee and security for the acceptance of the Contract.

Checks shall be made payable to the Treasurer, City of Detroit.

No proposal once submitted may be withdrawn for at least 45 days after the actual opening of the bids. The City of Detroit reserves the right to waive any irregularity in any bid, or to reject any or all bids, should it be deemed for its best interest.

CITY OF DETROIT
GLENN C. RICHARDS
Commissioner of Public Works

M. F. WAGNITZ
City Engineer

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Bids: October 2, 1956

### Resurfacing Employees' Parking Lot And Runway 6-24

THE PORT OF NEW YORK AUTHORITY
NEWARK AIRPORT
CONTRACT O & M—408

Sealed proposals for furnishing all labor, material and equipment for resurfacing sections of Runway 6-24 and the employees' parking lot at Newark Airport will be received at the office of the Department of Purchase and Administrative Services of The Port of New York Authority, Room 900, 111 Eighth Avenue, New York 11, New York, until 11 A.M., Tuesday, October 2, 1956, at which time and place said proposals will be opened and read.

Contract documents may be seen at the office of the Department of Purchase and Administrative Services, Room 900, and copies will be furnished upon deposit of $10.00 per set. Deposit must be delivered to Treasury Department, Room 1001, where a receipt in duplicate will be issued. The duplicate copy of the receipt is then to be delivered to the Department of Purchase and Administrative Services, and you will be furnished with the contract documents. The deposit will be remitted if the documents are returned in good condition, not later than thirty days after the opening of proposals. The deposit will be forfeited if the documents are not returned within thirty days.

THE PORT OF NEW YORK AUTHORITY
Donald V. Lowe, Chairman
New York, September 20, 1956

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# OFFICIAL PROPOSALS

Bids: September 27, 1956

THE RICHMOND-PETERSBURG
TURNPIKE AUTHORITY
RICHMOND, VA.

NOTICE IS HEREBY GIVEN that Sealed Bids will be received by The Richmond-Petersburg Turnpike Authority for:

CONTRACT NO. A-2-G, SECTION A

Construction of the Richmond-Petersburg Turnpike, Contract A-2-G, Section A, Grading, Drainage, Paving and Structures from Franklin Street to 13th Street, in the City of Richmond, Virginia.

Approximate length of the Project 0.41 mile Bids for the above described work will be received at the office of the Richmond-Petersburg Turnpike Authority, 1015 East Main Street or by mail at P. O. Box 1-R, Richmond 2, Va., until 10:00 A.M. (EST) 11:00 (DST) Thursday, September 27, 1956 and will be publicly opened and read aloud immediately thereafter in the Hunt Room of the Hotel Raleigh, 9th and Banks Streets, Richmond, Va.

Bids will be received only from those bidders who are registered in the State of Virginia and who are prequalified with The Richmond-Petersburg Turnpike Authority.

Plans, Specifications, Proposal, and form of Proposal Bond, Contract and Contract Bond are on file at the offices of the Richmond-Petersburg Turnpike Authority, 1015 East Main Street, Richmond, Va. and at the offices of the Engineers, Parsons, Brinckerhoff, Hall & Macdonald, 51 Broadway, New York, New York, where they may be inspected by prospective bidders during office hours.

Plans and Specifications (including Proposal Form, Proposal Bond Form, Contract and Contract Bond Form, Special Provisions and Turnpike Supplemental Specifications) may be purchased at the offices of the Authority by registered prequalified contractors for $60.00 per set. Va. Dept. of Highways, Road and Bridge Specifications may be purchased for $1.00 per copy each. Cross Sections, if desired, may be purchased for an additional $15.00 per set. No refund will be made for any of the above stated charges.

Proposal Guaranties consisting of either a certified or cashier's check in the amount of not less than 2½% of the total amount bid made payable to The Richmond-Petersburg Turnpike Authority together with a satisfactory Proposal Bond in an amount of not less than 20% of the total amount bid, specifying The Richmond-Petersburg Turnpike Authority as the Obligee must accompany each bid. All proposal guaranties will be returned immediately after the opening of bids except those of the three lowest bidders.

All work shall be done in accordance with the Plans and the Virginia Dept. of Highways, Road and Bridge Specifications dated April 1, 1954 as amended by The Turnpike Supplemental Specifications dated March, 1956; both as amended by the Special Provisions.

The Authority reserves the right to reject any or all bids, submitted in response to this advertisement, and to waive technicalities as it may deem best for the interest of the Authority.

NOTE: Plans and Specifications will not be mailed prior to the receipt of payment of cost shown in this Advertisement.

The Richmond-Petersburg Turnpike
Authority
John Pershing
General Manager

Bids: October 22, 1956

## Construction of Sewerage System

Sealed proposals will be received by the undersigned at BOROUGH COUNCIL CHAMBERS, SLATINGTON HOSE COMPANY NO. 1, 401 WEST CHURCH STREET, SLATINGTON, LEHIGH COUNTL, PENNSYLVANIA until 6:30 P.M. Eastern Standard Time, October 22, 1956, at which place and time, or shortly thereafter they will be publicly opened and read, and shall cover furnishing all necessary labor, materials and equipment, and performing all work for the Contracts noted below. Separate proposals will be received upon five (5) parts of the project as hereinafter indicated. Each proposal shall be accompanied by a certified check or bid bond in an amount not less than ten percent of the bid total, all in accordance with the provisions contained in the Contract Documents.

Copies of the Contract Documents, including Drawings and Specifications, may be obtained only from the office of LEONARD M. FRAIVILLIG COMPANY, ENGINEERS, BETHLEHEM TRUST BUILDING, CORNER OF BROAD AND MAIN STREETS, BETHLEHEM, PENNSYLVANIA, at which place copies will also be on hand for inspection by prospective bidders, and material and equipment suppliers. Not more than two (2) sets of a particular Contract will be allowed to any prospective bidder.

Checks for all deposits shall be drawn payable to LEONARD M. FRAIVILLIG COMPANY and sent to their address as indicated above. Deposit for each set requested shall be as follows:

| | |
|---|---|
| Contract One—CONSTRUCTION OF A SEWERAGE SYSTEM | $50.00 |
| Contract Two—GENERAL CONSTRUCTION OF A SEWAGE TREATMENT PLANT, PUMPING STATION, FORCE MAIN, AND OUTFALL SEWER | $30.00 |
| Contract Three—PLUMBING WORK IN CONNECTION WITH CONSTRUCTION OF A SEWAGE TREATMENT PLANT AND PUMPING STATION | $20.00 |
| Contract Four — HEATING WORK IN CONNECTION WITH CONSTRUCTION OF A SEWAGE TREATMENT PLANT AND PUMPING STATION | $20.00 |
| Contract Five — ELECTRICAL WORK IN CONNECTION WITH CONSTRUCTION OF A SEWAGE TREATMENT PLANT AND PUMPING STATION | $20.00 |

Full refund will be made only to actual bidders on the five (5) Contracts noted above, for return of one (1) set, no more, of a particular Contract in good condition within fifteen (15) calendar days after closing date for receipt of bids; refund for return of all other sets in good condition within the same period, will be fifty (50) percent of deposit. No refund of deposit will be made for Contract Documents returned later than fifteen (15) calendar days after date of receipt of bids.

Copies of the Contract Documents, including Drawings and Specifications will be on file, for inspection purposes only, at Citizens National Bank, 506 Main Street, Slatington, Pennsylvania, and at the office of Gannett Fleming Corddry and Carpenter, Inc., Engineers, 600 North Second Street, Harrisburg, Pennsylvania; but none can be obtained from these last two above mentioned places.

Slatington Borough Authority
Slatington
Lehigh County
Pennsylvania

Leonard M. Fraivillig Company
Engineers
Bethlehem, Pennsylvania

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Bids: October 23, 1956

## City of Superior, Wisconsin

### NOTICE TO CONTRACTORS

The City of Superior, Wisconsin, will receive sealed bids for the construction of a Sewage Treatment Plant and completing the Interceptor Sewer System, until 10:00 A.M. on the 23rd day of October, 1956, in the office of the City Manager at the City Hall, at which time they will be opened by the undersigned.

No bid can be received or considered unless accompanied by a certified check equal to 5% of the bid or a bid bond in equal amount payable to the city as a guaranty that, if the bid is accepted, the bidder will execute and file the proper contract and bond within ten (10) days from the date the successful bidder's bid is accepted. In case the bidder fails to file such contract and bond within the time set by the city, the check or bid bond shall be forfeited to the city as liquidated damages; otherwise to be returned.

Said work is to be performed in accordance with plans and specifications prepared by Hitchcock & Estabrook, Inc., Consulting Engineers, and now on file in the office of the City Clerk.

Separate bids are required for the following items:

1. General Construction.
2. Plumbing.
3. Electrical.
4. Heating and Ventilating.

A separate contract will be awarded for each of said items, to the lowest responsible bidder therefore, and no bid for any of said items may be conditioned upon the award of the contract for one or more of the remaining items to the same bidder.

Plans and specifications may be seen at the office of the City Clerk, at the Builders Exchanges in Duluth, St. Paul, Minneapolis, and Milwaukee, and at the office of Hitchcock & Estabrook, Inc., 2101 West 78th Street, Minneapolis 23, Minnesota.

Plans and specifications for individual use may be obtained at the offices of the engineers upon making a deposit of $100.00 which will be returned to unsuccessful bidders provided plans and specifications are returned at the time bids are opened or before.

Fifty percent of the deposit will be returned to non-bidders provided plans and specifications are returned at the time bids are opened or before.

Minimum wage scale to be paid on said project by the contractor is on file in the City Clerk's office.

Bidder's Proof of Responsibility may be obtained at the office of the City Clerk and must be filed with the City Clerk of the City of Superior, at least five (5) days before the date of Letting.

Bidder must submit all bids in a sealed envelope plainly marked on the outside, "Sewage Disposal Bid" and the envelope must have the bidder's name and return address marked thereon.

The bids may be held for a period of time, not to exceed fifty days after date of opening during which time no bid may be withdrawn without the consent of the City of Superior.

The City of Superior, reserves the right to reject any or all bids.

Dated Sept. 4, 1956
Board of Public Works
Superior, Wisconsin

HITCHCOCK & ESTABROOK, INC.
Consulting Engineers
2101 West 78th Street
Minneapolis 23, Minnesota

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Bids: October 16, 1956

## City of Mobile, Alabama Project #771-K3

### ITEM I

### ADVERTISEMENT

Sealed proposals will be received by the Board of Water and Sewer Commissioners of the City of Mobile, in the City Hall, at Mobile, Alabama until 2:30 P.M. C.S.T., October 16, 1956, and then publicly opened, for furnishing all labor and materials, and performing all work required for the construction of Project No. 771-K3, Primary Sedimentation, Aeration, and Final Settling Tanks, Sludge Digestion System and Blower Buildings for the Mobile Sewage Treatment Plant.

All bids must be on blank forms provided in the Specifications. A certified check or a **Bidder's Bond, payable to the Board of Water** and Sewer Commissioners of the City of Mobile, for an amount not less than 10% of the amount bid shall be filed with the Proposal, the Bidder's Bond being prepared upon the form specified and signed by a Bonding Company authorized to do business in the State of Alabama.

A Performance Bond in an amount not less than the sum bid will be required at the signing of the Contract, and, in addition, a bond in an amount not less than 50% of the contract price, insuring payment for all labor and materials. The right is reserved to reject any and/or all bids and to waive informalities.

Minimum wage rates on the project shall be not less than Prevailing nor less than those established by Federal and/or State agencies having jurisdiction.

Plans and Specifications are on file, and may be seen in the office of the Board of Water and Sewer Commissioners of the City of Mobile, and in the office of the Ewin Engineering Corporation, Mobile, Alabama. Plans and Specifications may be obtained by depositing $50.00 with the Engineer, none of which will be refunded.

No bid will be considered unless the Bidder, whether resident or non-resident of Alabama, is properly qualified to submit a proposal for this construction in accordance with all applicable laws of the State of Alabama. This shall include evidence of holding a current license from The State Licensing Board for General Contractors, Montgomery, Alabama.

No bid shall be withdrawn for a period of 30 days subsequent to the opening of bids without the consent of the Board of Water and Sewer Commissioners of the City of Mobile.

BOARD OF WATER AND SEWER
COMMISSIONERS OF THE
CITY OF MOBILE
By: Wright Smith, Jr., Chairman

Ewin Engineering Corporation
150 Savannah Street
Mobile, Alabama

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Bids: October 9, 1956

## The Port of New York Authority Newark Airport Terminal Building Parking Lot Installation of Treadles and Counters

### Contract NA-420.001

Sealed proposals for furnishing and installation of treadles and counters in the Terminal Building Parking Lot at Newark Airport will be received at the office of the Chief Engineer of the Port of New York Authority, Room 1100, 111 Eighth Avenue, New York 11, N. Y., until 2:30 P.M. on Tuesday, October 9, 1956, at which time said proposals will be opened and read in Room 1108.

Contract documents may be seen at the office of the Engineer of Design of the Authority, Room 1115, and copies will be furnished upon request. No deposit will be required but the documents shall be returned in good condition not later than forty days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Donald V. Lowe, Chairman
New York, Sept. 20, 1956.

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Bids: October 4, 1956

## New Jersey Turnpike Authority

### CONTRACT NO. N-68

Proposals are invited for Contract No. N-68 which involves grading, drainage, paving and other incidental work at Maintenance 7-Caven Point in Jersey City, Hudson County, New Jersey, all in connection with the construction of the Newark Bay-Hudson County Extension of the New Jersey Turnpike.

The principal items of work include:

| | |
|---|---|
| Storm Drains, Reinforced Concrete Pipe | 800 Lin. Ft. |
| Bituminous Concrete Pavement | 3,500 Sq. Yds. |
| Concrete Curb | 1,050 Lin. Ft. |
| Guard Rail | 610 Lin. Ft. |
| 6" Topsoil and Seeding | 4,000 Sq. Yds. |
| Chain Link Fence | 1,450 Lin. Ft. |

Proposals will be received at the New Jersey Turnpike Authority Administration Building, New Brunswick, New Jersey, until 11:00 o'clock, Eastern Daylight Saving Time on the morning of October 4, 1956, at which time and place said proposals **will be publicly opened and read.**

Each bidder must submit with his proposal a Contractor's Financial and Equipment Statement.

Contract documents may be examined during office hours on or after September 17, 1956, at the office of the Authority and at the office of the Consulting Engineers, Howard, Needles, Tammen & Bergendoff, 99 Church Street, New York 7, New York. Contract documents will be furnished upon payment of Five Dollars ($5.00) for each set, upon application to the Authority. Contract documents are not required to be returned and the payment will not be refunded.

NEW JERSEY TURNPIKE AUTHORITY
Paul L. Troast, Chairman
September 12, 1956

Bids: October 4, 1956

## *The Illinois State Toll Highway Commission*
## *Northern Illinois Toll Highway*
## *North Illinois Route*
## *Contract N-4A*

Sealed Proposals will be received by The Illinois State Toll Highway Commission at the office of the Commission, 20 North Wacker Drive, Chicago 6, Illinois, until 11:00 o'clock A.M., Central Daylight Savings Time (10:00 o'clock A.M., Central Standard Time) on Thursday, October 4, 1956, and immediately thereafter will be taken to the Louis XVI Room of the Sherman Hotel, Randolph and Clark Streets, Chicago, Illinois, and publicly opened and read aloud.

Prospective bidders are hereby informed that the first sentence of Section 314a 38 of Chapter 121 of the Illinois Revised Status provides that—

> "All contracts let for the construction of any work authorized to be done under the provisions of this Act where the amount thereof is in excess of the sum of $1,000, shall be let to the lowest responsible bidder or bidders on open, competitive bidding after public advertisement made at least fifteen days prior to the opening of bids, in a newspaper of general circulation published in each of the seven largest cities of the State, as determined by the last preceding Federal census in such manner and at such intervals as may be prescribed by the Commission."

The work to be done under this Contract shall be completed in four hundred (400) calendar days after the date specified in the Notice to Proceed, and consist of:

> The grading, drainage, paving, the construction of appurtenances, and the erection of precast concrete bridges for approximately 5.49 miles of the Northern Illinois Toll Highway in Construction Section N-4A thereof, beginning at a point about 6,400 feet west of S.A. Route 31 at Northern Illinois Toll Highway centerline station 1258+00 in Riley Township, McHenry County, Illinois, and extending easterly to a point 580 ft. west of T.R. 108 at Northern Illinois Toll Highway Centerline Station 1548+00 in Coral Township, McHenry County, Illinois.

The approximate quantities of the principal items of work are as follows:

| | |
|---|---|
| Roadway excavation | 350,000 Cu. Yds. |
| Borrow | 650,000 Cu. Yds. |
| Selected Subgrade | 105,000 Cu. Yds. |
| Granular Subbase | 60,000 Cu. Yds. |
| 10" Reinforced PCC Pavement | 160,000 Sq. Yds. |
| 3" Bituminous Concrete Shoulders | 105,000 Sq. Yds. |
| Guard Rail | 13,000 Lin. Ft. |
| Right-of-Way Fence | 60,000 Lin. Ft. |
| Structure Concrete | 2,600 Cu. Yds. |
| Reinforcing Steel | 360,000 Lbs. |

Copies of the Plans, Specifications, Proposal Forms and other Contract Documents for said Contract are available for public inspection or purchase at the office of the Chief Engineer, The Illinois State Toll Highway Commission, Room 1654, 20 North Wacker Drive, Chicago 6, Illinois. These documents may be purchased from said Chief Engineer for the following sums, per set, which sums are non-returnable:

| | |
|---|---|
| Standard Specifications for Northern Illinois Toll Highway | $5.00 |
| Proposal Form, Special Provisions and other Contract Documents, per copy | $5.00 |
| Plans, per set | $25.00 |

A Bidders' Conference will be held in the Assembly Room, Suite 631, 20 North Wacker Drive, Chicago, Illinois, at 10:00 o'clock A.M., Central Daylight Savings Time, on Thursday, September 27, 1956.

**OFFICIAL PROPOSAL**

**RATE:** $2.10 per line (or fraction) per insertion.

**CLOSING DATE:** 10:30 a.m. Friday for issue out following Thursday.

**SEND COPY:** Official Proposal Division, Engineering News-Record, 330 W. 42nd St., New York 36, N. Y.

All Proposals must be on the forms prescribed by the Commission, and must comply with the terms and conditions set forth in the Contract Documents.

A Contractor's Financial Statement and Experience Questionnaire, a Plan and Equipment Questionnaire, and a Statement of Current Contractual Obligations on forms supplied by the Commission will be required from all bidders.

Each Proposal must be accompanied by a Proposal Guaranty in the amount of five (5) per cent of the total amount shown in the Proposal for the Contract, provided that the Proposal Guaranty will not be required in an amount exceeding $250,000.00 for any one contract. The Proposal Guaranty shall be in the form of an acceptable bid bond or a bank draft, certified check or cashier's check drawn on a solvent bank made payable to The Illinois State Toll Highway Commission.

In accordance with the provisions of an Act of the General Assembly of the State of Illinois entitled "An Act regulating wages of laborers, mechanics and other workmen employed under contracts for public works," approved June 26, 1941, as amended, the Commission has made an investigation and finds that the general prevailing wage rates in the locality in which the Work covered by this Contract is to be performed are as follows:

| | Hourly Wage Rate | |
|---|---|---|
| TRADE AND CLASSIFICATION | Stra't Time | *Over-time |
| BRICKLAYERS | $3.60 | (a) |
| CARPENTERS | 3.35 | (a) |
| CEMENT MASONS | 3.45 | (c) |
| IRON WORKERS | 3.25 | (a) |
| OPERATING ENGINEERS on | | |
| Power Shovels, Diggers | 3.20 | (b) |
| Master Mechanics | 3.20 | (e) |
| All Pavers and mixers 27E or over | 3.15 | (e) |
| Asphalt Plants | 3.10 | (e) |
| All Pavers and mixers, under 27E | 3.05 | (e) |
| Cranes, Clam shells used for rehandling material, loading hoppers, derricks pumpcretes, surfacing and retreading machines, motor patrols, power blades, Tournapuls, front end loaders, hilifts, scoops, power earth drills, power augers | 3.00 | (e) |
| Mechanics | 2.95 | (e) |
| Bull dozers | 2.90 | (e) |
| Small rubber tire end loaders | 2.85 | (e) |
| Rollers, sub graders, finishing machines, bull floats concrete spreaders, asphalt spreaders, side boom tractors, truck winches with "A" frames handling materials | 2.75 | (e) |
| Grade rollers, elevating graders stone crushers, tamping machines form graders, material handling conveyors | 2.65 | (e) |
| Tractors | 2.60 | (e) |
| Dinky locomotives, curb sidewalk, culvert and bridge mixers | 2.55 | (e) |
| Air compressors, welding machines boilers, tank car heater | 2.50 | (e) |
| Blade graders (manually operated) | 2.45 | (e) |
| Winter maintenance work (December to April) | 2.40 | (e) |
| Pumps, firemen, oilers and helpers mechanical heaters, power saws on pavement, truck crane drivers | 2.35 | (e) |
| Helpers, maintenance | 2.10 | (e) |
| LABORERS | | |
| Jackhammer, drill, concrete breakers and air spade | 2.65 | (f) |
| Form setters, sheeters, cribbers, black top rakers, pipe layers, bottom men | 2.55 | (f) |
| Asphalt tampers, smoothers, cement handlers, running mixers, hoists, vibrators puddlers, air tampers | 2.45 | (f) |
| Others | 2.40 | (f) |
| PAINTERS | 3.00 | (d) |
| Pipe fitters | 3.59 | (e) |
| Plumbers | 3.59 | (a) |
| Teamsters and Chauffeurs on Oil distributors, one man operation explosive, fission material trucks, trucks over 16 cu. yds. | 2.90 | (e) |
| Master mechanic | 2.80 | (e) |
| 6 wheel trucks over 10 cu. yds., dumpsters track trucks, euclids, hug bottom dump tourna-trailers or tourna-pulls when pulling other than self loading equipment or similar equipment 8 cu. yds. up to and including 16 cu. yds. batch trucks over 3-34E batches | 2.70 | (e) |
| Ready mix plant hopper, mixer trucks dispatcher | 2.65 | (e) |
| 4 wheel trucks over 6 cu. yds., 6 wheel trucks 10 cu. yds. and under, carry-alls, winch trucks, oil distributors two man operation, heavy duty, tandem and semi-trailer service trucks fork lifts, hoisters pavement breakers, A frames when used for transportation purposes, batch trucks, 3-34E batches, pole trailers, skilled dump foreman, mechanics; dumpsters, track trucks, euclids, hug bottom dump tourna-trailers or tournapulls when pulling other than self loading or similar equipment 8 cu. yds. and under, power mover tractor | 2.55 | (e) |
| 4 wheel truck 6 cu. yds. and under, service trucks other than heavy duty, air compressors and welding machines, batch trucks 2-34E batches or less, mechanics helpers, greasers, teamsters and helpers, warehousemen and dockmen, hopperman, skipmen, unskilled dumpmen | 2.35 | (e) |
| Car and truck washers | 2.20 | (e) |

* **HOURLY WAGE RATES FOR OVERTIME**

(a) Double time for time worked after 4:30 P.M. Monday through Friday and for all time worked on Saturdays, Sundays, and Holidays.

(b) Time and one half for the ninth hour worked in any one day and for over forty hours in one week. Double time for the tenth and succeeding hours worked in any one day and for time worked on Sundays and Holidays.

(c) Time and one half for the ninth and tenth hours worked in any one day. Double time for time worked thereafter in any one day and for Sundays and Holidays.

(d) Time and one half for over eight hours worked in any one day Monday through Friday. Double time for time worked on Saturdays, Sundays and Holidays.

(e) Time and one half after eight hours of work in any one day and after forty hours of work in any one week. Double time for time worked on Sundays and Holidays.

(f) Time and one half after eight hours worked in any one day or after 4:30 P.M. Monday through Friday and for all time worked on Saturday. Double time for time worked on Sundays and Holidays.

If the Bidder is an out-of-state corporation, it shall be required to furnish a certificate from the Secretary of the State of Illinois as evidence that the corporation has complied with the Illinois Foreign Corporation Statutes, and that the corporation is authorized to transact business in the State of Illinois.

The award of the above contract, if any award be made, will be to the lowest responsible bidder or bidders. The Commission reserves the right to reject any or all proposals and to waive technicalities.

THE ILLINOIS STATE TOLL
HIGHWAY COMMISSION
by Austin L. Wyman, Chairman.

September 13, 1956

Bids: September 27, 1956

## The Richmond-Petersburg Turnpike Authority, Richmond, Va.

NOTICE IS HEREBY GIVEN that Sealed Bids will be received by The Richmond-Petersburg Turnpike Authority for:

CONTRACT NO. D-2-G, SECTION D

Construction of the Richmond-Petersburg Turnpike, Contract D-2-G, Section D, Grading, Drainage, Paving and Structures; from a point 5,100 feet South of Swift Creek to a point 1,800 feet North of Route 10, in Chesterfield County, Virginia.

The approximate length of the Project is 6 miles.

Bids for the above described work will be received at the office of The Richmond-Petersburg Turnpike Authority, 1015 East Main Street or by mail at P. O. Box 1-R, Richmond 2, Va., until 10:00 A. M. (EST) 11:00 A. M. (DST), Thursday, September 27, 1956 and will be publicly opened and read aloud immediately thereafter in the Hunt Room of the Hotel Raleigh, 9th and Bank Streets, Richmond, Va.

Bids will be received only from those bidders who are registered in the State of Virginia and who are prequalified with The Richmond-Petersburg Turnpike Authority. Plans, Specifications, Proposal, and form of Proposal Bond, Contract and Contract Bond are on file at the offices of The Richmond-Petersburg Turnpike Authority, 1015 East Main Street, Richmond, Va. and at the offices of the Engineers, Parsons, Brinckerhoff, Hall & Macdonald, 51 Broadway, New York, where they may be inspected by prospective bidders during office hours.

Plans and Specifications (including Proposal Form, Proposal Bond Form, Contract and Contract Bond Form, Special Provisions and Turnpike Supplemental Specifications) may be purchased at the office of the Authority by registered prequalified contractors for $50.00 per set. Va. Dept. of Highways, Road and Bridge Specifications may be purchased for $1.00 per copy each. Cross Sections, if desired, may be purchased for an additional $100.00 per set. No refund will be made for any of the above stated charges.

Proposal Guaranties consisting of either a certified or cashier's check in the amount of not less than 2½% of the total amount bid made payable to The Richmond-Petersburg Turnpike Authority together with a satisfactory Proposal Bond in an amount of not less than 20% of the total amount bid, specifying The Richmond-Petersburg Turnpike Authority as the Obligee must accompany each bid. All proposal guaranties will be returned immediately after the opening of bids except those of the three lowest bidders.

All work shall be done in accordance with the Plans and the Virginia Dept. of Highways, Road and Bridge Specifications dated April 1, 1954 as amended by The Turnpike Supplemental Specifications dated March 1956; both as amended by the Special Provisions.

The Authority reserves the right to reject any or all bids, submitted in response to this advertisement, and to waive technicalities as it may deem best for the interest of the Authority.

NOTE: Plans and Specifications will not be mailed prior to the receipt of payment of cost shown in this Advertisement.

The Richmond-Petersburg
Turnpike Authority.
John Pershing
General Manager

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Bids: September 25, 1956

## Specifications No. PA-5-11023
## St. Lawrence Contract No. 31

POWER AUTHORITY OF THE STATE OF NEW YORK
ADVERTISEMENT FOR PROPOSALS
FOR
RESERVOIR CLEARING
BETWEEN
WADDINGTON AND BARNHART ISLAND POWER PLANT
ST. LAWRENCE COUNTY, NEW YORK

NOTICE TO CONTRACTORS: The POWER AUTHORITY OF THE STATE OF NEW YORK will receive sealed proposals for the Reservoir Clearing between Waddington and Barnhart Island Power Plant, St. Lawrence County, New York, until 10:30 A.M. Eastern Daylight Saving Time on the 25th day of September 1956, at the Authority's office, 270 Broadway, Room 1305, New York, New York, at which time and place the proposals will be publicly opened and read aloud.

The work consists of a total of approximately 9,200 acres of clearing divided into five schedules as follows:

Schedule No. 1: Approximately 1,900 acres
Schedule No. 2: Approximately 1,900 acres
Schedule No. 3: Approximately 3,100 acres
Schedule No. 4: Approximately 1,900 acres
Schedule No. 5: Approximately 400 acres
Schedules No. 6, 7 and 8: Bidders may quote on any one, any combination or all of the above schedules under Schedules No. 6, 7 and 8.

All of the clearing work under any schedule, combination of schedules or all schedules shall be completed on or before May 1, 1958.

Plans, specifications and Proposal Forms for the work will be on file in the Authority's office and in the offices of the Engineer, Uhl, Hall & Rich, 230 Congress Street, Boston 10, Massachusetts, and The Hydro-Electric Power Commission of Ontario, 620 University Avenue, Toronto 2, Ontario; may be inspected by prospective bidders during office hours and may be obtained from the Power Authority of the State of New York, 270 Broadway, Room 1300, New York 7, New York, upon application and prepayment of a fee of Twenty-five ($25.00) dollars per initial set and Ten ($10.00) dollars per set for additional sets, no part of which will be refunded.

Bids will not be restricted to American contractors.

Bids must be made in duplicate in accordance with instructions contained in the Information for Bidders. Guarantee will be required with each bid in an amount not less than 10 percent of the gross sum bid as defined in the Information for Bidders.

The right is reserved to reject any or all bids.

W. S. CHAPIN
GENERAL MANAGER

PA-5-11023

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Bids: September 28, 1956

## Saint Paul, Minnesota

STATE PROJECT
NOTICE TO CONTRACTORS

Sealed proposals will be received until 10:00 A. M., September 28, 1956, by the Commissioner of Highways for the State of Minnesota, at the office of the Highway Department, 1246 University Avenue, St. Paul, Minnesota for the construction of the State Project listed below. Proposals will be opened and read publicly by the Commissioner of Highways at the above address immediately after the hour set for receiving bids.

The attention of bidders is directed to the special provisions covering the subletting or assigning the contract.

The minimum hourly wage to be paid on the following project shall be as follows:

WAGES:

| AREA | SKILLED LABOR |
|---|---|
| 1 and 2 | $2.63 to $3.425 |
| Intermediate Grade Labor | Unskilled Labor |
| $2.25 to $3.00 | $1.95 to $2.925 |

A detailed list of wage scales for the project and the governing wage area will be found in the special provisions for this project.

The bidder's attention is also directed to the special provisions contained in the proposal requiring the payment of prevailing local wage rates prescribed under local collective bargaining agreements if said prevailing local wage rates are higher than the minimum wage rates set forth in the special provisions of the proposal. It shall be the obligation of bidders to obtain complete information regarding the application of said prevailing local wage rates.

BRIDGE:

S.P. 2727-06 (T.H. 65-50), Minnesota project 1 390-4 (4), located in Bloomington in Hennepin County. The minimum wage rates for this project have been predetermined as required by law and are set forth in the bid proposal. These rates are the same as prescribed for wage areas 1 and 2. This project comprises bridge No. 6557, total length 1387 feet, consisting of 169-200-224-200-224-200-169 foot deck girder spans with 2—27 foot roadways, over the Minnesota river. (Plans $2.00)

Proposals, plans and specifications may be examined and secured at the office of the Higfihway Department.

Requests for plans must be submitted on construction form No. 1227, accompanied by check, draft, or money order, payable to the Commissioner of Highways.

Bids must be accompanied by a certified check made payable to the Commissioner of Highways or a corporate surety bond made in favor of the State of Minnesota in an amount as shown in the schedule printed on the back of the proposal form.

M. J. HOFFMAN,
COMMISSIONER OF HIGHWAYS

Bids: October 16, 1956

## City of Mobile, Alabama
## Project #771-K2

ITEM I
ADVERTISEMENT FOR BIDS

Sealed proposals will be received by the Board of Water and Sewer Commissioners of the City of Mobile, in the City Hall, at Mobile, Alabama until 2:30 P.M. C.S.T., October 16, 1956, and then publicly opened, for furnishing all labor and materials, and performing all work required for the construction of Project No: 771-K2, Administration Building, Maintenance Building and Chlorination Building for the Mobile Sewage Treatment Plant.

All bids must be on blank forms provided in the Specifications. A certified check or a Bidder's Bond, payable to the Board of Water and Sewer Commissioners of the City of Mobile, for an amount not less than 10% of the amount bid shall be filed with the Proposal, the Bidder's Bond being prepared upon the form specified and signed by a Bonding Company authorized to de business in the State of Alabama.

A Performance Bond in an amount not less than the sum bid will be required at the signing of the Contract, and, in addition, a bond in an amount not less than 50% of the contract price, insuring payment for all labor and materials. The right is reserved to reject any and/or all bids and to waive informalities.

Minimum wage rates on the project shall be not less than Prevailing nor less than those established by Federal and/or State agencies having jurisdiction.

Plans and Specifications are on file, and may be seen in the office of the Board of Water and Sewer Commissioners of the City of Mobile, and in the office of the Ewin Engineering Corporation, Mobile, Alabama. Plans and Specifications may be obtained by depositing $50.00 with the Engineer, none of which will be refunded.

No bid will be considered unless the Bidder, whether resident or non-resident of Alabama, is properly qualified to submit a proposal for this construction in accordance with all applicable laws of the State of Alabama. This shall include evidence of holding a current license from the State Licensing Board for General Contractors, Montgomery, Alabama.

No bids shall be withdrawn for a period of 30 days subsequent to the opening of bids without the consent of the Board of Water and Sewer Commissioners of the City of Mobile.

BOARD OF WATER AND SEWER
COMMISSIONERS OF THE
CITY OF MOBILE
By: Wright Smith, Jr., Chairman

Ewin Engineering Corporation
150 Savannah Street
Mobile, Alabama

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Bids: October 16, 1956

## The City of Edmonton

ENGINEERING DEPARTMENT

Tender for—Large Diameter Storm Sewer Construction—1956-57

CONTRACT NO. 121

Sealed tenders marked "Tender for Storm Sewer Construction—Northeast Edmonton", will be received by the City Commissioners, Civic Block, Edmonton, Alberta, until NOON, TUESDAY, OCTOBER 16th, 1956.

Estimate of work to be undertaken comprises the supplying of material, digging, laying and backfilling of approximately 22,000 lineal feet monolithic concrete or precast storm sewer, ranging in size from 84" to 120" in diameter, varying in depth from 5' to 35'; together with necessary manholes and chambers. (Contractors may submit prices for alternative pipe sections).

All information may be obtained at the City Engineer's Office, Civic Block, Edmonton, Alberta, on or after WEDNESDAY, SEPTEMBER 19th, 1956, on payment of TEN DOLLARS ($10.), which sum will NOT be refunded.

Bids must be accompanied by a certified cheque for 3% of the total value of the tender and the consent of a Bonding Company. The bid cheque will be returned after a contract is signed with the successful bidder.

The lowest or any tender not necessarily accepted.

THE CITY COMMISSIONERS
EDMONTON, ALBERTA.

## OFFICIAL PROPOSALS

Bids: October 16, 1956

### City of Richmond, Virginia

NOTICE TO BIDDERS

Sealed Proposals will be received at the office of the Director, Purchases and General Services, 4th floor, Mosque Building, Laurel and Main Streets, Richmond, Virginia, until but not later than 11 o'clock A.M. E.S.T., October 16, 1956, at which time they will be publicly opened and read aloud, for the following work which may be awarded in whole or in part:

Location: The pumping station is to be located at a site northwest and adjacent to the Sewage Treatment Plant, situated near the southwest bank of the James River at Rockett's Wharf, northeast of the United States Naval Diesel School, in the City of Richmond, Virginia.

Type of Work: Division II—Main Pumping Station—General, includes the construction of the pumping station, junction chamber, regulator chamber, incoming sewers and outside piping, and all appurtenat work, except that included under Division III.
Division III—Main Pumping Station—Pumping Equipment, includes the furnishing, testing and delivering of the sewage pumps together with motors, engines, drives and appurtenances.

The proposal and other contract documents may be examined at the office of the Director of Public Works, 217 Governor Street, Richmond, Virginia, and at the office of Greeley and Hansen, Engineers, 220 South State Street, Chicago 4, Illinois. Copies of the contract documents may be obtained from the office of the Director of Public Works upon the deposit of Twenty-Five Dollars for each set. Any general contractor who submits a bona fide bid on the project will be refunded his payment in full for not more than three sets, and will be refunded fifteen dollars per set for each additional set. All others will be refunded fifteen dollars per set upon the return of the documents in good condition within ten days after the opening of the bids.

J. W. Huffman
Director of Purchases and
General Services

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Bids: September 27, 1956

### Power Authority of the State of New York

ADVERTISEMENT FOR PROPOSALS
FOR
THE CLEARING AND CHEMICAL
TREATMENT
OF RIGHT OF WAY OF
TRANSMISSION LINES
NEW YORK
SPECIFICATION NO. PA-6-11
ST. LAWRENCE CONTRACT NO. T 1

NOTICE TO CONTRACTORS: The POWER AUTHORITY OF THE STATE OF NEW YORK will receive sealed proposals for the clearing and chemical treatment of right-of-way of the Barnhart-Plattsburgh Transmission Project, New York, until 10:30 AM Eastern Daylight Saving Time on the 27th day of September 1956, at the Authority's office, 270 Broadway, Room 1305, New York, New York, at which time and place the proposals will be publicly opened and read aloud.

The estimated work consists of:
550 acres—clearing
650 acres—chemical treatment
The work shall be completed on or before September 1, 1957.

Plans, specifications and Proposal Forms for the work will be on file in the Authority's office and in the offices of the Engineer, Uhl, Hall & Rich, 230 Congress Street, Boston 10, Massachusetts, may be inspected by prospective bidders during office hours, and may be obtained from the Power Authority of the State of New York, 270 Broadway, Room 1300, New York 7, New York, upon application and prepayment of a fee of Ten ($10.00) dollars, for initial set and Five ($5.00) dollars for each additional set, no part of which will be refunded.

Bids must be made in duplicate in accordance with instructions contained in the Information for Bidders. Guarantee will be required with each bid in an amount not less than 10 percent of the gross sum bid.

The right is reserved to reject any or all bids.

W. S. CHAPIN
GENERAL MANAGER

PA-6-11

## OFFICIAL PROPOSALS

Bids: October 9, 1956

### Sewage Treatment Plant

SEWAGE TREATMENT PLANT, SEWERS
AND
WATER DISTRIBUTION SYSTEM
EXTENSION
VILLAGE OF VERNON,
ONEIDA COUNTY, N. Y.

Sealed proposals for furnishing all labor, equipment and material for the construction and installation of Sewage Treatment Plant, Sewers and Water Distribution System Extension and appurtenances for the Village of Vernon, N. Y., will be received by the Village Board of the Village of Vernon at the Fire Station, Vernon, N. Y., until 2:00 P.M. Eastern Daylight Time on Tuesday, October 9, 1956, at which time they will be publicly opened and read aloud.

The work will be divided into the following contracts:

1. Sewage Treatment Plant.
2. All sewers exclusive of those in the Black Addition.
3. Water distribution system extension and sewers in the Black Addition.

These contracts may be awarded separately or in any combination that the Village Board may deem to be in the best interests of the Village.

The Information for Bidders, Form of Bid, Form of Contract, Performance Bond, Plans and Specifications may be examined at the office of the Village Clerk, Vernon, New York, and copies thereof may be obtained from William T. Field, Consulting Engineer, Watertown, N. Y., upon a deposit of Fifteen ($15.00) Dollars for each set, which sum will be returned to all bidders upon their return in good condition, within thirty (30) days after the opening of the bids.

The Village Board reserves the right to waive any information in or to reject any or all bids or to accept any bids that they deem is in the best interests of the Village.

Each bidder must deposit with bid, security in the amount of not less than five (5%) percentum of the bid in the form and subject to the conditions provided for in the Information for Bidders.

The successful bidders will be required to furnish a performance bond in such form and having as surety thereas such surety company or companies as are approved by the Village Board, in an amount of not less than 100% of the total amount of the accepted bid.

Dated: September 5, 1956

VILLAGE OF VERNON, N. Y.
JOHN W. BLACK, JR.
MAYOR

WILLIAM T. FIELD
Consulting Engineer
Watertown, N. Y.

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Bids: September 25, 1956

### Contract 453

WEST DELAWARE TUNNEL

SEALED BIDS will be received by the Board of Water Supply, at its offices, thirteenth floor, 120 Wall Street, New York City, until 11:00 A.M. Eastern Daylight Saving Time (10:00 A.M. Eastern Standard Time), on Tuesday, September 25, 1956, for Contract 453, for the construction of a portion of the West Delaware Tunnel of the Delaware system, comprising the construction of about 26,000 linear feet of tunnel, including Shaft 4 approximately 380 feet deep, located in the Town of Colchester, Delaware County, and in the Town of Rockland, Sullivan County, New York.

At the above place and time the bids will be publicly opened and read. Pamphlets containing information for bidders, forms of bid and contract, specifications, contract drawings, requirements as to surety, etc., can be obtained in Room 1317, at the above address, upon application in person or by mail, by depositing the sum of five dollars ($5.00) in cash or its equivalent for each pamphlet. Within 30 days following the award of contract or rejection of bids, the full amount of such deposit will be refunded for each pamphlet submitted as a bid and a refund of four dollars ($4.00) will be made for each other pamphlet returned in acceptable condition. Arrangements will be made whereby prospective bidders desiring blueprints of the contract drawings for their own use may secure same, the cost thereof to be paid by them. For further particulars, apply at the office of the Chief Engineer at the above address.

IRVING V. A. HUIE, President, EDWARD C. MAGUIRE, HERBERT M. ROSENBERG, Commissioners, Board of Water Supply; BETTY COHEN, Acting Secretary.

## OFFICIAL PROPOSALS

Bids: October 29, 1956

### Humber Sewage Treatment Plant

THE MUNICIPALITY OF
METROPOLITAN TORONTO
Contract D-22-56
Sedimentation and Aeration Tanks and
Related Structures

The Municipality of Metropolitan Toronto invites sealed tenders for the construction of the primary and secondary treatment units of the Humber Sewage Treatment Plant, located on the west bank of the Humber River immediately north of The Queensway, in the Township of Etobicoke in The Municipality of Metropolitan Toronto.

The Humber Plant will have an average design capacity of 50 million Imperial gallons per day. The work includes the construction of two 2-pass pre-aeration tanks, four rectangular primary sedimentation tanks, five 3-pass aeration tanks, eight square final sedimentation tanks, two primary sludge pumping stations, one return sludge pumping station, connecting galleries and conduits, by-pass sewers, and other related structures and work complete, except that the sludge-collecting mechanisms for the primary and final sedimentation tanks will be supplied under another contract, but installed under this contract, and that the return sludge pumps will be supplied and installed under a separate contract.

Plans and contract documents may be obtained at the Metropolitan Department of Works, 20 Eglinton Avenue East, Toronto 12, Ontario, upon payment of a deposit of one hundred dollars ($100.00), which deposit will be refunded upon the return in good condition to the Commissioner of Works of said plans and contract documents.

Tenders must be addressed to the Chairman and Members of the Executive Committee of The Municipality of Metropolitan Toronto, and must be delivered to the Metropolitan Clerk at his office, 67 Adelaide Street East, Toronto 1, not later than 12.00 o'clock noon, Eastern Standard Time, on Monday, October 29, 1956. Envelopes containing tenders must be plainly marked on the outside as to their contents.

The attention of tenderers is especially directed to the information clauses regarding shortages of material, price submitted, time for completing work, and other contracts.

Each tender shall be accompanied by a certified cheque or cash in an amount not less than two-and-a-half percent (2½%) of the total amount of the tender, and all cheques shall be made payable to the Treasurer of The Municipality of Metropolitan Toronto.

Conditions referring to tendering as described in the contract documents must be strictly complied with. The lowest or any tender will not necessarily be accepted.

F. G. Gardiner, Q.C., Chairman,
Metropolitan Council.
W. W. Gardhouse, Clerk,
The Municipality of Metropolitan
Toronto.

August 29, 1956.

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DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-4762) will be received at Weaverville, California, until October 23, 1956, for furnishing labor and materials for Earthwork, Structures, and Surfacing for Connecting Access Road, Highway 299 to Trinity River Crossing, Central Valley Project, California. Location approximately 30 miles northwest of Redding, California. Principal items are 900,000 cu. yds. excavation; 7,400 feet of 8-inch to 72-inch corrugated metal pipe; 220 tons of liquid asphalt; and other work. Completion time 300 days. For particulars, address Bureau of Reclamation, Weaverville, California; or Building 53, Denver Federal Center, Denver 2, Colorado. W. A. Dexheimer, Commissioner.

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DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-4763) will be received at Winters, California, until October 16, 1956, for furnishing labor and materials for County Road Bridge-Putah Diversion Dam Pool, Solano Project, California. Location near Winters, California. Principal items are 270 cu. yds. concrete; furnishing and erecting 130,000 pounds structural steel; and other work. Completion time 300 days. For particulars, address Bureau of Reclamation, P. O. Box 546, Winters, California; or Building 53, Denver Federal Center, Denver 2, Colorado. W. A. Dexheimer, Commissioner.

## OFFICIAL PROPOSALS

Bids: September 27, 1956

### New York State Road Work

NOTICE TO CONTRACTORS: STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of the Highway Law, Canal Law, and Article 2, Title 9 of the Public Authorities Law, and special provisions for projects financed with Federal Aid Funds, sealed proposals will be received until ten-thirty o'clock A.M., advanced standard time, which is nine-thirty o'clock A.M., eastern standard time, on the 27th day of September, 1956, by Henry A. Cohen, Director, Bureau of Contracts and Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., for the following projects:

| County | Contract No. | Name of Highway | Miles | Type | Bid Deposit | Department Estimate |
|---|---|---|---|---|---|---|
| DISTRICT No. 1, G. L. Nickerson, District Engineer, 353 Broadway, Albany, N. Y. | | | | | | |
| Albany and Rensselaer | TABS 56-71 | New York State Thruway—Berkshire Section (Hudson River Bridge & Approaches) | 1.074 | Reinf. Conc. Substructure | $450,000<br>Plans $15 | $8,629,000 |
| Essex | FASS 56-8 | Tahawus-Schroon River Pt.<br>Proj. No. S-1047(3) | 1.67 | Asp. Conc. Opt. = 1.60 mi.<br>Misc. Work = 0.07 Mi. | $20,000<br>Plans $10 | 368,000 |
| Essex (Rte. 28N) | FARC 56-66 | Aiden Lair-Newcomb Pt. 1 & 2 S.H. 5187-756<br>Proj. No. S-210(1) | 7.38 | Asp. Conc. Opt. = 7.35 Mi.<br>Misc. Work = 0.03 Mi. | $80,000<br>Plans $25 | 1,470,000 |
| Rensselaer (Rte. 7) | FARC 56-71 | Whitehouse Bridge-Vermont State Line, S.H. 1426<br>Proj. No. F-570(6) | 0.12 | Asp. Conc. Opt. = 0.06 Mi.<br>Misc Work = 0.06 Mi. Reinf. Conc. Box Br. 21.3′ | $4,300<br>Plans $10 | 77,000 |
| Rensselaer | BT 56-1<br>ST 56-8 | New York State Thruway—Berkshire Section-Sub. B-2 (Route 9 to Rensselaer-Columbia County Line) and 3 Secondary Cross Roads | 3.13<br>(5.02 Acc.) | 9″ Cem. Conc. Pavt. 2 @25′ Var. Wide = 7.23 Mi.<br>Bit. Mac. Ty. 1 = 0.90 Mi. Misc. Work = 0.02 Mi.<br>11 Hy. Seps. Comp. I-Beams 156.6′, 155.3′, 156.6′, 140.6′, 133.6′, 142.4′, 143.3′, 148.4′, 148.1′, 106′ & 106′<br>2 Brs. Comp. I-Beams 77′ & 77′ | $268,000<br>Plans $100 | $4,869,000 |
| Schenectady | M-56-7 | Lock 9 Erie Canal, Town of Glenville | .... | Furnishing & Installing New Upper Gates; Plating Portions of Upper Approach Walls & Other Misc. Work | $5,500<br>Plans $10 | 101,000 |
| DISTRICT No. 3, William Robinson, Dist. Engr., 301 E. Water St., Syracuse, N. Y. | | | | | | |
| Oswego (Rte. 57) | FAC 56-10 | City of Fulton: North-South Arterial (First, Fourth & Second Sts.)<br>Proj. No. U-583(7) | 2.49<br>(0.42 Acc.) | Asp. Conc. Ty. 2A = 1.77 Mi. 9″ Cem. Conc. Pav. 24′-52′ Var. Wide = 0.72 Mi. Misc. Work = 0.42 Mi. | $60,000<br>Plans $15 | 1,100,000 |
| DISTRICT No. 4, B. F. Perry, District Engineer, Barge Canal Terminal, Rochester 1, N. Y. | | | | | | |
| Monroe | FASH 56-7<br>FASH 56-8<br>FARC 56-76 | Winton Road-Sea Breeze, Pt. 2 Ridge Road-East, Pt. 1 Winton Road-Sea Breeze, Pt. 1, FASH 52-1 Rochester-Webster, Pt. 1, SH 98<br>Proj. No. U-1097(2); U-1116(1) | 2.53<br>(4.00 Acc.) | 9″ Cem. Conc. Pavt. 2 @ 24′ Wide = 2.45 Mi.<br>Asp. Conc. Opt. = 3.95 Mi. Misc. Work = 0.13 Mi.<br>3 Hy. Seps. Comp. I-Beams 157′, 198′ and 152′<br>1 Ped. Overpass Plate Gird. 195′ | $200,000<br>Plans $50 | 3,757,000 |
| DISTRICT No. 8, K. G. Rauer, Acting District Engineer, Pleasant Valley Road, Poughkeepsie, N. Y. | | | | | | |
| Orange (Rte. 32 & 300) | FARC 56-75 | Newburgh-Shawangunk, S.H. 161<br>Proj. No. F-416(3) | 4.80 | Asp. Conc. Opt. | $22,000<br>Plans $10 | 409,000 |
| DISTRICT No. 10, M. E. Goul, District Engineer, 325 West Main Street, Babylon, L. I., N. Y. | | | | | | |
| Queens (Rte. 25D) | FA HHE 56-2 | Horace Harding Expressway<br>Sect. 1 (Cont. 3)<br>Proj. No. I-862(9) | 0.86<br>(3.03 Acc.) | 9″ Cem. Conc. Pavt. With Carb. Black 2 @ 36′ Var. Wide = 0.77 Mi. 9″ Cem. Conc. Pavt. Var. Wide = 0.42 Mi. Asp. Conc. Opt. = 2.70 Mi. 3 Brs. Comp. I-Beams 439.9, 382′ and 335.1′ 1 Ped. Overpass Steel Gird. 131.5′ | $350,000<br>Plans $100 | 6,244,000 |

Any projects in this letting that are on the Federal Aid highway system are subject to the provisions of the "Federal-Aid Highway Act of 1956", being Public Law 627, 84th Congress, approved June 29, 1956, and are also subject to the applicable New York State statutes.

In compliance with the provisions of Section 115 (Prevailing Rate of Wage), Public Law 627, the minimum wages to be paid laborers and mechanics are included in wage schedules that are set out in the bid proposal.

Maps, plans, specifications and proposal forms may be seen and obtained at the office of the State Department of Public Works, Bureau of Contracts and Accounts, Albany, N. Y., and at the office of the District Engineers noted above, and may also be seen at the office of the State Department of Public Works, 270 Broadway, New York City.

The deposit for Plans and Proposal Forms for each contract is indicated above. A refund will be made in full to bidders for return of one set, in good condition, within 30 days of award, or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

Special attention of bidders is called to "General Information for Bidders" in the proposal, specification, and contract agreement, and to the special provisions applying to projects financed with federal funds. Award of a contract is subject to priorities and allocations under the Defense Production Act of 1950, as amended, and all regulations issued thereunder.

Proposal for each contract must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum as specified in the advertisement and the proposal. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Laws, as set forth in "Instructions to Bidders".

The right is reserved to reject any or all bids.

JOHN W. JOHNSON,
SUPT. OF PUBLIC WORKS

# EMPLOYMENT OPPORTUNITIES

(Continued on pages 123-126)

*REPLIES (Box No.): Address to office nearest you c/o This publication Classified Adv. Div.*
*New York: P. O. Box 12 (36)*
*CHICAGO: 520 N. Michigan Ave. (11)*
*SAN FRANCISCO: 68 Post St. (4)*

## POSITIONS VACANT

**Wanted: Civil Engineers for permanent work** on bridges in both design and field offices of established consulting engineer. Please send education and experience resume, references, and salary requirement. P-2368, Engineering News-Record.

**Associate Professor of Civil Engineering—BS** & MS in Civil Engineering to teach engineering mechanics, surveying, highway & reinforced concrete. Salary $5400 for nine months. Location—Texas. P-2297, Engineering News-Record.

**Supervisory positions for High Dam Construction** in India. Former Supervisory employees or those now in supervisory positions who have worked with me on projects in the past and are interested in foreign work. Contact me by letter: M. H. Slocum, 504 East Pine Street, Alhambra, California.

**Highway and Bridge Designers, design draftsmen** and surveyors by expanding highway engineering organization. Location, Middle-West. Give experience and references. P-2777, Engineering News-Record.

**Engineers and Draftsmen. Structural mechanic** for work in consulting engineers office in Hartford, Conn. area. Address reply to P-2873, Engineering News-Record.

**General Superintendent, qualified engineer for** Kansas contractor, must have proven experience on industrial buildings & gov't. projects. Salary open. P-2754, Engineering News-Record.

## POSITIONS VACANT

**Large Midwest Consulting firm has opening** for experienced sewage and industrial waste treatment designer. Excellent opportunity for man of proven ability with large well established organization. Inexperienced designer need not apply. State full experience record and salary range in first reply. Travel and subsistence for interview will be considered. P-2843, Engineering News-Record.

**Wanted: Executive Engineer for Florida construction** firm, capable of estimating and managing all phases of road, bridge, and underground construction. Satisfactory salary with bonus. Must have executive management experience as well as field management. P-2864, Engineering News-Record.

**Structural & misc. Steel Detailer—Must be** experienced, excellent climate, good housing conditions, top wages. Give full particulars. Tucson Iron Works, Box 1949, Tucson, Arizona.

**Wanted: Project Superintendent, familiar with** P.H.A. Housing Projects; one who can take complete charge and coordinate subcontractors. Position permanent with Mid-South General Contractor. All inquiries acknowledged. P-2905, Engineering News-Record.

**Materials Engineer for work in Midwest. Must** know concrete paving, some soils, some asphalt paving. Degree required. Registration desired. $9-10,000. Reply Box P-2888, Engineering News-Record.

**Engineer. Unequalled opportunity in growing** general contracting business in Central Pennsylvania. Permanent position with opportunity for ownership participation. State experience, salary desired and age. P-2793, Engineering News-Record.

## POSITIONS VACANT

**Wanted—Young man, age 23 to 35, with water** works experience to work for growing private water utility in active Illinois city. Excellent opportunity as assistant to manager. Salary open. Please submit complete resume stating education, age, experience, salary desired and date of availability. P-2609, Engineering News-Record.

**Senior Cost Engineer familiar with the Uniform** System of Accounts for electric utilities. Duties will consist of analyzing completed major construction projects for an Electric Utility. Experience with the Federal Power Commission or a State Public Service Commission would be desirable. Some experience with the Property Record Department of any Electric Utility would also be an asset. Indianapolis Power and Light Company. Employment Department, 1230 West Morris St., Indianapolis, Indiana.

**Designers—Steel, Concrete, Electrical Piping,** Air-Cond., Power Plants & Industrial Bldgs. Marbarry Corp., 120 Greenwich St., N.Y.C. Rector 2-3749.

**Wanted: Draftsmen, also Bridge Designers and** Highway Designers, preferably with some field experience for major highway and bridge projects. Forward education and experience records along with salary requirements. Brookhart & Tyo, Consulting Engineers, 1729 N. Front Street, Harrisburg, Penna.

**Heavy Equipment Engineer with at least 2 to** 3 years of Mechanical Engineering Schooling for work in the South. Full information and references in first letter requested. Reply P-2917, Engineering News-Record.

(Continued on opposite page)

# EMPLOYMENT OPPORTUNITIES

—RATES—

**DISPLAYED**

The advertising rate is $28.25 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.

**An advertising inch** is measured 7/8" vertically on a column—3 columns—30 inches to a page.

Subject to Agency Commission.

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**Position Wanted ads take 1/2 of above rate.**

**Box Numbers**—count as 1 line.

**Discount of 10%** if full payment is made in advance for 4 consecutive insertions.

Not subject to Agency Commission.

**Send NEW ADS and Inquiries to Classified Advertising Division of ENGINEERING NEWS-RECORD**
**P. O. Box 12 N. Y. 36, N. Y. October 4th issue closes September 21st**

## POSITIONS VACANT

(Continued from opposite page)

**Civil Engineers, for expanding well-established firm.** Permanent. Southern Connecticut. Highways, structures, soils, sanitary. Salary open. Reply giving qualifications, availability, salary expected to P-2913, Engineering News-Record.

**Field Geologist: Carry on field investigations** and geological studies for portland cement mfr. for purpose of developing new sources of raw materials and extending knowledge of present deposits. Will hdqr. in Chicago, Ill., but must be free to travel. Will consider graduates as well as experienced applicants. Must have degree. Give full details on exp., training, personal data, and salary desired in first letter. Reply to P-2876, Engineering News-Record.

**Engineers experienced in design and supervision** of construction to work as resident engineers or prepare plans for water and sewer systems; also, architects for preparation of plans for general building work. State experience, age, salary required, when can report, and give references. Reply P-2827, Engineering News-Record.

**Architectural Engineer — Experienced steel** and concrete designer for attractive position in office of Central Pennsylvania Architect. Work includes churches, schools and commercial buildings. Permanent position and attractive salary. P-2756, Engineering News-Record.

**Wanted: Registered Professional Engineer** specializing in Soil Mechanics, capable of taking complete charge of Soil Mechanics office performing soil exploration, laboratory testing, and writing engineering reports with respect to foundation requirements. Experience necessary. Some experience in structural design of foundations preferable but not essential. Good salary commensurate with qualifications. State qualifications in full, experience resume, references and salary requirements. P-2945, Engineering News-Record.

**Civil Engineer: To supervise Engineering Department** in rapidly growing Santa Clara Valley city 35 miles south of San Francisco. Population now 21,000 and will increase to a minimum of 45,000. Must be registered as C.E. in California and have 5 years experience in C.E. Municipal background desirable. Salary range $553-$673. Submit a letter of application giving experience, education and personal background to Personnel Office, City Hall, Mountain View, Calif.

**Estimator — For Baltimore, Maryland area.** Fully experienced on large building projects. Permanent position. Salary commensurate with ability. Please furnish experience record, training, and salary desired in first reply. Our employees aware of this ad. P-2993 Engineering News-Record.

**Civil Engineers — Immediate vacancies for** beginners and experienced Civil Engineers. Work related to flood control projects and hydrologic studies. Openings in Chicago and Springfield Illinois. Salary range $400-$600. Reply stating experience, location preferred and salary desired. Box P-2948 Engineering News-Record.

**Draftsman—Civil Engineering Projects. Permanent.** Benefits. Salary open. Send resume of education and experience to P-2960, Engineering News-Record.

### SALES ENGINEERS

**A major steel company has need for sales engineers to promote and sell fabricated products in middle Atlantic states. Excellent opportunities for men 25 to 30 years old with engineering background and a desire for sales work. Attractive starting salary with company car, expenses and bonus plan.**

**P-8324, Engineering News-Record**
**330 W. 42 St., New York 36, N. Y.**

## POSITIONS VACANT

**Sales Manager—Construction specialty manufacturer.** Permanent position with a 30 year old firm with established dealers throughout this country and Canada. Will be in charge of sales program in establishing additional dealers, sales training and advertising. Supervisory experience in sales is essential and some engineering background would be helpful. Age 30 to 40. P-2981 Engineering News-Record.

**General Supt. Engr. for Sewers and water lines** must be well experienced in supervisory installation and estimating, coordinating inside and outside. Old established Company. Resume held in confidence. Columbia Constr. Co. Inc., 2108 Columbia Ave., Indianapolis 2, Ind., WAlnut 3-1567, Mr. Farrer.

**Architectural Specification Writer to prepare** contract specifications. Gamble, Pownall & Gilroy, Box 2165, Ft. Lauderdale, Fla.

## POSITIONS WANTED

**Highway Engineer, Registered, 30. Six years** diversified highway experience, four years at federal level, two years with consulting firm. Presently in charge of highway design. PW-2901, Engineering News-Record.

**Construction Manager or General Superintendent.** Recently sold own successful contracting business. Desire to relocate in Florida or South East. Know all phases of general contracting business. Proven ability. 30 years experience. Age 49. Now employed as general superintendent. PW-2912, Engineering News-Record.

**Accountant experience office manager in** heavy construction, dams and air field buildings and under ground systems. College major accounting special course industrial management, age 45, married, wife and I go anywhere. PW-2897, Engineering News-Record.

**Registered Engineer, 30 veteran desires opportunity** in consulting or contracting firm, highways and structures. Present salary over $8000. Prefer middle west location. Replies answered promptly. PW-2790, Engineering News-Record.

**Construction Manager. Industrial constr.** Civil Engr., job-planning, cost-control, estimating & management specialist. Now situated Phoenix. Confidential replies. Reply PW-2527, Engineering News-Record.

**Civil Engineer 20 yrs. experience mainly water** and sewerage. Complete supervision design some supervision construction. Available now. Please specify duties and approx. earnings first reply. PW-2852, Engineering News-Record.

**Superintendent, heavy & bridge construction,** 19 years experience bid to completion. $200. PW-2835, Engineering News-Record.

**Highway engr. twelve years foreign service** approaching retirement status seeking connection in consulting capacity—address—PW-2920, Engineering News-Record.

**Construction Executive sound experience all** phases, bid to completion, buildings and heavy construction, available as project manager, chief estimator or similar position where scope and volume require top man. Now employed. Minimum $15,000. PW-2596, Engineering News-Record.

**Sanitary Engineer, B.S.C.E., M.S.S.E., P.E.,** age 29. Have assumed full responsibility for several complete sewage treatment plants, ranging up to 25 MGD, including design, specifying equipment, and supervising and coordinating department activities in large consulting engineering firm. Desire to locate in firm experienced in sewage and water treatment plant design, preferably in South or West. Min. $12,000. PW-2985, Engineering News-Record.

## POSITIONS WANTED

**Ass't Field Sup't., BSCE., 5 yrs. experience** bridge, building, airport construction. Prefer heavy construction. PW-2990, Engineering News-Record.

**Construction Supt. or Assit. Available., PW-**2975, Engineering News-Record.

**Mining Engineer — Production — Exploration** — Sales Promotion. Background includes management of surface and dredging operations; geologic exploration and evaluation of non-ferrous deposits including several years in South America; sales, sales promotion and product development of earth moving and drilling equipment, and explosives. Experienced in United States Government contracts. PW-2942, Engineering News-Record.

**Mechanical Engineer, eighteen (18) years experience** in all phases of mechanical work, usually associated with large consultling engineering offices in New York City, including petroleum piers, oil pipelines, tank forms, airports, tunnels, roads, buildings, etc. Position desired should be of responsibility level, involving reports, design, specifications, bid analysis, supervision, etc., New York or vicinity, Box PW-2944, Engineering News-Record.

**Dirt and Construction Superintendent, wanting** job. 28 years experience, sober, honest and capable. Available now. PW-2955, Engineering News-Record.

**Office Manager-Accountant. Familiar with** field and office heavy construction detail. All phases general and cost accounting, payrolls, taxes etc. Will relocate. PW-2994, Engineering News-Record.

**Project Engineer—on large industrial-commercial** projects. 18 years with two nationally known engineering-construction firms. Competent to assume complete responsibility for management of medium size firm. Licensed P.E. 5 States, certified nationally. Prefer northern N. J. but will go anywhere for right salary plus share of profits. PW-2957, Engineering News-Record.

**Construction or project manager, 48, engineering** background. 30 years experience all phases heavy construction roads, bridges, hydroelectric projects, steel and concrete structures. Proven administrator and producer. Desires short term assignment. Excellent pinch hitting during sick leave, vacations or where job needs a boost. Would consider permanent connection. Available October 15. Domestic or foreign. PW-3002, Engineering News-Record.

**C.E. and M.E. in power plant engineering including** 28 years of diversified experience in heavy and light construction, wishes new connection as a construction manager, general superintendent, project manager, or engineer, foreign work preferred with mild climate. Experience in airfields, water distribution, disposal plants, roads, railroads etc. Now employed in Spain. Available 60 days. PW-3000, Engineering News-Record.

**Structural Engr., 65, life-time experience in** struct. steel and reinf. concr. industrial design, etc., wants position in town or small city. Hyde, 5581 Bluehill, Detroit, 24, Michigan.

## PART-TIME WORK WANTED

**Group of Engrs., P.E., 15 yrs. exp., Ind. Power** Systems, waterworks-pumping, distribution purification-design, maintenance, and operation. PTWW-2996, Engineering News-Record.

# ENGINEERS
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**THE
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**Due to a vast expansion program openings also exist for:**

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**Interested people are invited to send resumes to Mr. R. R. Haarlow, Professional Employment Co-ordinator. All inquiries will be treated on a confidential basis.**

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### RESIDENT ENGINEER AND DEPUTY RESIDENT ENGINEER

**To supervise construction of $40,000,000 rockfill dam in the Middle East. Four-year completion schedule. Please send detailed experience and personal record. Specify salary expected aad earliest date available.**

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# SOUTH DAKOTA DEPARTMENT OF HIGHWAYS

## ● ENGINEERING OPPORTUNITIES ●

Openings on the South Dakota Department of Highways staff present permanent opportunities for recent Civil Engineering graduates and experienced engineers in the following classifications and salary brackets:

| | |
|---|---|
| **Structural Designer - - -** | **$6240-7020** |
| **Structural Draftsman - - -** | **5420-6240** |
| **Civil Engineers (Highway—Survey—Design—Construction Drafting) - - - - - -** | **4800-7020** |

**Benefits include sick leave with pay, paid vacations, military leave with pay, available hospitalization plan.**

***For application forms, contact:***

**C. V. DOODY, *Personnel Director***
**Department of Highways**
**Pierre, South Dakota**

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Investigate this opportunity. Write today, giving age, education and experience. Your inquiry will be kept strictly confidential and will be answered promptly.

**P-2652,** Engineering News-Record
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# ENGINEERS

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Position: In charge of modern highway testing laboratory and materials survey in Near East.

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*Top salary—good living conditions—liberal benefits including paid transportation for wife.*

**P-2966,** Engineering News-Record
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

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**P-3003,** Engineering News-Record
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## CONSTRUCTION EQUIPMENT SALES ENGINEER

**Off highway haulage equipment department. Opportunity for sales engineer or construction man 30 to 35 years of age in established territory for AAA-1 construction distributor. *Give full details of background and experience in first letter to***

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*Positions open for men*
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**MECHANICAL or CHEMICAL ENGINEER, or PHYSICIST** (advanced degree or equivalent experience) to do fundamental research in interior ballistics.

**B.S. MECHANICAL ENGINEER** with inspection or machine shop experience to supervise Components Inspection Group.

**B.S. or M.S. MECHANICAL, CIVIL or ELECTRICAL ENGINEERS** to plan and complete mechanical design phases of rocket component research.

**CHEMICAL ENGINEERS, PHYSICISTS, MATHEMATICIANS** (B.S., M.S., or Ph.d.) for applied ballistics research work.

**B.S. or M.S. CHEMICAL ENGINEERS** to do design and development work on rocket components.

**Write to EMPLOYMENT OFFICE**

**HERCULES POWDER CO.**
**ALLEGANY**
**BALLISTICS LABORATORY**
**Cumberland, Md.**

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## DESIGNERS
## DRAFTSMEN
## Drainage Engineers

**FOR OFFICE WORK IN ST. LOUIS ON HIGHWAYS EXPRESSWAYS AND ASSOCIATED CIVIL WORKS**

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***Plus Employee Benefit and Retirement Plan, Paid Vacations, Holidays, Sick Leave. Blue Cross available.***

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**Bridge Designers—Draftsmen**
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**BAKER BLDG.** ***Consulting Engineers*** **ROCHESTER, PA.**

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### ASSISTANT TO SUPT.
### For
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This opening provides a steppingstone to executive assignment and unlimited potential. Please reply giving personal, business and educational background.

**P-2959**, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

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## CHIEF ESTIMATOR

**Well known New Jersey General Contractor needs qualified man to head Estimating Dep't., Degree Preferred. Engineering background necessary. Must have at least 10 years of successful bidding experience in all phases of heavy construction, such as Highways, Structures, Dams, Drainage, etc.**

**Salary $10,000.00 up. Unlimited opportunity for properly qualified man. All replies confidential. Our employees know of this ad.**

**P-2999**, Engineering News-Record
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

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## SUPERINTENDENT

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- Work in Los Angeles
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Piping
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Men experienced in design of earthfill or concrete dams, spillways, penstocks and hydro electric power stations are desirable. Allied experience acceptable.

Send resume to
Manager of Employment & Placement
Industrial Relations Division

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**220 Bush St., San Francisco 4, Calif.**

For an immediate personal interview you may phone:

Paul Keating, Plaza 7-4400, New York City
Joe Braddick, Fairfax 3-2401, Houston, Texas
Bill Milligan, Tucker 1549, Los Angeles, Calif.
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## and
## STRUCTURAL

ENGINEERS
DESIGNERS
DRAFTSMEN

Permanent positions for qualified personnel experienced in civil, soils, drainage, railway, highway and structural engineering for work on:

**BRIDGES and BUILDINGS**
**HYDROELECTRIC PROJECTS**
**INDUSTRIAL FACILITIES**
**AERONAUTICAL TEST FACILITIES**
**FLOOD PROJECTS**

Openings available in our St. Louis and San Francisco offices.

Please furnish full particulars in regard to education, experience and salary history, salary requirement, and date available.

**SVERDRUP & PARCEL, INC.**
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**P-2808**, Engineering News-Record
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

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**Personnel needed to complete technical party. Work involves design and supervision of construction of highways and bridges in South Vietnam. Duties include instruction of on-the-job trainees. High degree of initiative, judgment, and skill in handling human relations required in addition to professional competence. The following positions are to be filled:**

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**Soils Engineers**
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**Party Chiefs**
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**A limited number of Junior Highway Engineers will be accepted. All other personnel must be experienced and able to provide references. Duration of project is two years minimum. Some housing available, but most personnel will be in field housing. Limited number of personnel may be accompanied by dependents. Only those interested in difficult and challenging work should apply.**

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***Consulting Engineers***
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*Send post card for details.*

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**CONSTRUCTION CONSULTANTS**
**P.O. Box 921 Lake Worth, Florida**

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**Contract Disputes? Government construction** contractors who have contract questions under dispute are offered assistance in the settlement or the appeal of said disputes. SS-2433, Engineering News-Record. P. O. Box 12, New York 36, N. Y.

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**$21,000.00**

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**Used as Demonstrator for short time.**
**Excellent Condition.**

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Excellent Condition
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Any length Booms, 30 Ft. Jibs,
Open Throat Boom Points,
Independent Boom Hoists,
18′-4″ Crawlers, 33″ Treads.

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ALSO

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**PILE EXTRACTOR**

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One 25 ton & one 44 ton G. E. Diesel Elec.

**2 YD. P & H DIESEL SHOVEL**

855A New 1948, Hardly Used, Cat. D17000

**N-1 GUNITE**

1 N-1 Gunite Machine
30 Ton Stiff Leg Derrick
1 American 38 Ft. Mast 86/106 Ft. Boom

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**2 yard shovel**

Rebuilt and Guaranteed. Powered by Waukesha WAKD Diesel. Available Immediately.

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# Editorials

## Underdeveloped Countries

To THE STALEMATE that has plagued the logical development of the Jordan River for the past decade is now added the sad case of the Nile and Egypt's Aswan Dam. Such spectacular instances of failure tend to heighten skepticism with respect to attempts to alleviate conditions in underdeveloped countries through the construction of badly needed facilities.

This should not be the case because, looked at around the world, considerable progress is being recorded in doing what Israel, Jordan and Egypt have failed to do. As a matter of fact, right next door to these failures, another Middle East country—Iraq—is showing remarkable success in lifting itself toward modernity. Turkey is another example, and India is a particularly noteworthy one at the present time because she has just finished one "five year plan", and is beginning on another.

It was back in 1950 that India set up some sizable goals for water resource development in order to increase her agricultural production. With construction of dams and irrigation systems growing by some 20% in the ensuing five years, agriculture benefited sufficiently that the emphasis is now going to be turned to industrial development. This is also possible because a considerable amount of new power was a by-product of the water development projects. Actually, installed capacity is said to have increased from 1.1 million kw to 3.4 million kw. The goal of the second five-year plan is to double this power while providing new industry to consume it.

Among underdeveloped countries, India has not popularly been considered to be outstanding as one where opportunities exist in great numbers for foreign engineers and construction men. Yet U. S., French, British and Swedish consultants have been used on some of the water resource projects, and a top U. S. construction man is directing the work on the country's largest dam. There will be more such opportunities in the industrial segment of the second five year plan. Already four new million-ton steel plants are under way, with each of them benefiting from technical and financial aid from a different country—the U. S., Britain, Germany and the Soviet Union. The important point is that even in India where aid is less needed—and frequently less wanted—than elsewhere, there are opportunities for foreign engineers and construction men.

Pessimism with respect to underdeveloped countries is not warranted just because some countries get enmeshed in political difficulties that—temporarily or permanently—deprive them of advantages they otherwise could have. One of the characteristics of work with all underdeveloped countries is that there will be troublesome political questions to be dealt with, which require patience and perseverance beyond that normally demanded at home.

This characteristic, however, has to be lived with and mastered because, both on moral and economic grounds, these countries must be brought nearer the average state of modernity that the rest of the world enjoys. A higher standard of living throughout the world is also a must in the interest of peace. The current Suez Canal crisis makes this fact plain by its origins in Egypt's petulant reaction to disappointment over failure to get help on its Aswan Dam.

And so the problems of underdeveloped countries must continue to command attention for many years to come. And since their solution invariably involves construction, opportunities for engineers and construction men to utilize their skills for profit and satisfying achievement are sure to multiply. The field is worth plowing regardless of the difficulties.

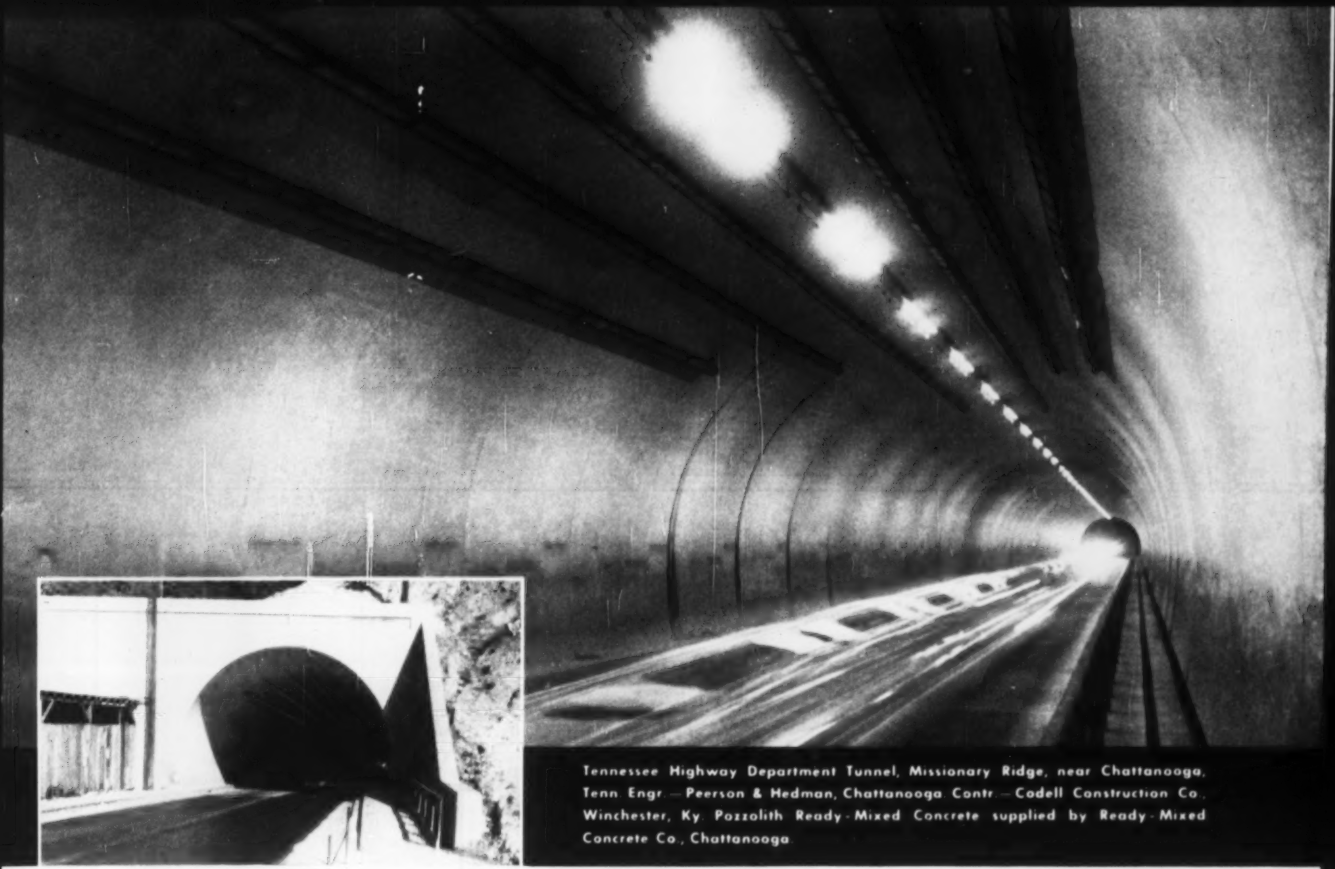
## Gird Up, It's Meeting Time

THE AVALANCHE OF CONVENTIONS, which breaks loose this time each year, is upon us. The summer respite is over; it's meeting time again when familiarity with such code names as NEWWA, APWA, FSIWA, ASCE, ACI, APHA is mandatory. Let's face it with as little dread and as much determination as possible.

Too late anyhow to head off or blunt the crush of meetings, words and meals. The places, the times, the programs, the menus—all are set by now. Montreal, Los Angeles, Pittsburgh, Fort Worth, Atlantic City; morning sessions, luncheon sessions, afternoon sessions, field excursions, dinner sessions, and the on-into-the-evening sessions that blend one day indistinguishably into the next with hardly the sleep in between to rest the senses, and naught but the monotonously predictable menus to replenish the energies.

There ought to be a better way to do our business, the business of our industry. It should be possible to get along with fewer meetings, find some more efficient way to bring together men and ideas. What would a benefit-cost study on convention-going show?

But this is idle summer thinking. No time for that now. Fall is upon us; the conventions are here. It's the system; make the most of it. Go we must, listen we will. For, let's admit it: In the torrent of words drop the new ideas to be detected; in the sea of faces bob the contacts to be made; in the routine of procedure there's the occasional issue which will be settled. What other way? How else but by bringing heads together can group thinking be accomplished? Until some better way is found, be resigned, determined, put all possible into it, get most possible out of it. Let's face it together. It's meeting time.



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Completed Texaco Asphaltic Concrete surface at the left and the 6-inch broken stone base at the right.

U. S. Route 550 crosses the Molas Divide near Silverton, Colo., about 10,000 feet above sea level. On the curves and grades of such a mountain highway, dependable skid-resistance is an exceptionally important quality in a pavement.

A hot-mix Texaco Asphaltic Concrete pavement has been constructed on this 6.8 mile section of US-550. Laid to a compacted thickness of two inches, this skid-resistant, rugged wearing surface is supported by a six-inch foundation of crushed stone. The Texaco asphalt surface and the stone base form a completely flexible pavement from the subgrade up, which is capable of absorbing heavy traffic year after year, with a minimum of maintenance.

Hot-mix Texaco Asphaltic Concrete is one of many heavy-duty, intermediate and low-cost types of construction for highways, streets, airports and parking areas obtainable with Texaco asphaltic products. Helpful information about the methods and materials recommended for all these types is supplied in two free booklets. Copies may be obtained without obligation from our nearest office.

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